2007-2009 Puget Sound Conservation and Recovery Draft Plan

Submitted to Governor Gregoire and the Washington State Legislature December 2006

Puget Sound Action Team

Puget Sound Action Team and Council Review Draft
10-3-06 to 10-10-06

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APPENDIX: Detailed Budget Information by Agency

Information in the separate Appendix of Agency Budget Detail for the *2007-2009 Puget Sound Conservation and Recovery Plan* is submitted by state agencies and university programs to describe the activities and expected results to be accomplished with funding proposed in the plan budget. Detailed budget information is linked to priorities, strategies and results. The Appendix is available upon request at 800-54-SOUND or online at http://www.psat.wa.gov/Publications/07-09_plan/07-09_plan.htm

Introduction

Puget Sound Priorities

The Puget Sound Action Team (Action Team), created in law in 1996, is charged with defining, coordinating and putting into action the state's environmental protection and restoration agenda for Puget Sound. The Action Team is made up of 10 state agencies and representatives of federal, tribal and local governments. The Puget Sound Council, which advises the Action Team, is composed of members representing tribal and local governments, key sectors of interest in Puget Sound, and the state legislature.

The *2007-2009 Puget Sound Conservation and Recovery Plan* will guide the state's work on Puget Sound from July 1, 2007 to June 30, 2009. This is the sixth such biennial plan developed by the Action Team. These biennial plans are the method by which the state implements the *Puget Sound Water Quality Management Plan* (Management Plan), the long-term comprehensive plan adopted by the state and federal governments to protect and restore Puget Sound. The Action Team and Council developed this proposed plan and budget for the two-year budget period, or biennium.

The Action Team has identified eight core priorities as the most important for our work together in Puget Sound (these priorities are not ranked):

- Clean up contaminated sites and sediments.
- Prevent toxic contamination.
- Prevent harm from stormwater runoff.
- Prevent nutrient and pathogen pollution.
- Protect functioning marine and freshwater habitats.
- Restore degraded marine and freshwater habitats.
- Protect species diversity
- Prepare for and adapt Puget Sound efforts to a changing climate.

For each priority, the plan includes long-term environmental goals that represent a significant resolution of the problem. The strategies outlined for each priority are the key approaches the Action Team partnership will use to achieve progress during the two-year period.

These priorities and the strategic approaches to addressing them are based on scientific data on the status and trends of indicators of Puget Sound's health, information that can be found in the Puget Sound Action Team's *Puget Sound Update 2006* (in press) and *State of the Sound 2006* to be published in January 2007.

Education and public involvement is an overarching strategy throughout this plan. Public understanding and involvement is critical to achieving progress on each of these priorities. The Action Team staff and agencies support and contribute to public environmental education at all levels of government. Some of those activities and programs are included in priority sections of this plan and funded through the Puget Sound plan and budget. Citizen and community groups, schools and universities, local and tribal governments, businesses and trade associations and others throughout the Sound give time and resources to environmental education programs. The public's positive response to these activities is evidence that Puget Sound is the center of a community that cares deeply about protecting its natural heritage.

Accountability for Plan Results

The core of this plan is made up of specific, measurable results, linked to budgets. The plan contains results under each strategy, for each priority. These results represent measurable progress towards the long-term environmental goals and outcomes. Agencies with primary responsibility for delivering or reporting on the results are clearly listed, along with key partners. **Each Action Team partner is accountable for the results described in the 2007-2009 plan** and each will report on progress and make adjustments as needed during the next biennium.

State agency partners developed their internal work plans and proposed budgets for the 2007-2009 biennium to align with the priorities and strategies in this plan. Agencies used public comments submitted in response to the April 2006 draft plan to revise and finalize the priorities, strategies and results. Several federal agencies also committed to specific results for work in Puget Sound, both as partners with state agencies and as stand-alone federal activities. Members of the Action Team representing tribal and local governments participated in discussions and development of the plan, and the entire Action Team was advised by members of the Puget Sound Council.

The Plan as a Strategic Framework for the Proposed Budget

The Action Team delivers this proposed *2007-2009 Puget Sound Conservation and Recovery Plan* to the governor and the legislature for their use as they develop the two-year state budget. After the biennial budget is approved, the Action Team will release a final plan for 2007-2009 reflecting that final budget.

This 2007-2009 Puget Sound plan proposes a combined state agency budget of nearly $333 million to deliver results intended to accelerate progress on the eight core priorities. (Budget information is on pages 61 to 88). The proposed budget does not correspond perfectly to all of the work described in the plan – some results are connected to statewide program budgets where agencies have not separated out the Puget Sound dollars. In addition, the investments of non-state partners are not reflected in the proposed state budget.

Of the total proposed budget, over $82 million represents requests for new state funding. The Action Team has listed those requests within the strategic context of this plan as shown on pages 86-88 ADD NOTE ON RANKED REQUESTS IF AND WHEN FINAL. State agencies will also participate in the statewide Priorities of Government process to set statewide funding priorities across all state government agencies.

The proposed 07-09 Puget Sound plan shows how each enhancement request contributes to advancing the work on Puget Sound priorities. The Appendix to this plan provides greater detail on these budget requests, as well as on other budget items, in a separate document. The Appendix also links individual budget activities to the results shown under each priority and to the long-term Management Plan.

Acknowledgements

State and federal Action Team agencies could not deliver the results in this plan without the significant contributions of tribal and local governments, and other public, private and non-profit entities that all work to protect and restore Puget Sound's water quality, habitats and species diversity. Tribal governments, cities and counties, businesses, farmers, trade associations, industries, ports, environmental organizations and others are critical partners in developing and implementing this plan. Most importantly, individual citizens acting as stewards of Puget Sound and working together as neighbors and communities are essential if we are to reach our long-term goal of a healthy, thriving and economically viable Puget Sound.

SIDEBAR: How the 2007-2009 Plan relates to recommendations of the Puget Sound Partnership

The Action Team's State of the Sound report in 2004 found that despite the significant efforts and investments made over two decades to preserve the Sound, the scale of the effort was not equal to the scale of the problems. Rapid population growth, land conversion and the accompanying increases in impervious surfaces; degradation and loss of habitat; and a slew of toxic contaminants entering the system, were all challenging government and private sector efforts to keep even with, or get ahead of, the problems.

Washington Governor Chris Gregoire responded to that message and launched a Puget Sound Initiative in December 2005 aimed at protecting and restoring Puget Sound. This multifaceted initiative included increased funding for critical actions ($52 million in 2006), and new law on oil transfers and septic system management.

The central element of the Initiative was creation of a high-level advisory body to identify critical actions to protect and restore the Sound. Called *The Puget Sound Partnership*, this blue ribbon commission effort brought together 18 leading citizens and four state legislators. Its charge was to recommend the actions needed to reach a healthy, sustainable Puget Sound by 2020, as well as recommendations on how to better engage

and involve the public, improve overall organization and governance of the Puget Sound effort, improve the use of science, and make suggestions on where and how to increase funding.

The Partnership will deliver its final report to the Governor in November 2006 with a suite of recommendations intended to scale up and improve our efforts to save Puget Sound.

WE will expand this section to discuss recommendations of the Partnership after November and we will add those to the plan that are appropriate.

Priority 1: Clean up contaminated sites and sediments

Long-term goal: Clean up all sites and sediments exceeding state standards for contamination.

Over the past 125 years, human activities around Puget Sound have introduced a wide array of chemicals into the environment that cause health problems for humans, plants and animals. Toxic chemicals have been released into the waters of the Puget Sound basin and have also contaminated upland sites. The contaminated upland sites are a continuing source of contamination to the Sound. Some of the more persistent chemicals have accumulated in the sediments of the Sound and from there have spread to accumulate in tissues of living organisms in the aquatic food web. Many types of fish as well as seals and orcas now show elevated levels of toxic contamination. Department of Health advisories to limit consumption of fish and shellfish from the Sound are increasing. Recent efforts include a fish consumption advisory for the Lower Duwamish River to address some of the highest polychlorinated biphenyl (PCB) levels observed in Washington State fish.

Some present day activities continue to release toxic chemicals such as polyaromatic hydrocarbons (PAHs from combustion), dioxins and mercury. However, pollution control practices are far better today than they were before existing environmental laws came into force. Most contaminated sites and sediments are the legacy of 125 years of uncontrolled or poorly controlled dumping and discharges to the upland, groundwater and submerged lands of the Puget Sound basin.

Contaminated sites on land are widely scattered because operations that caused the contamination like oil storage facilities, dry cleaners, creosote plants, smelters and other activities were located in many communities. Contaminated underwater sites on submerged lands are concentrated in the major urban bays, including Commencement Bay, Elliott Bay, Bellingham Bay, Sinclair Inlet, and other areas with extensive histories of industrial activities.

Today, large portions of Puget Sound's 1.8 million acres of submerged sediments show some form of chemical or biological degradation. The Department of Ecology (Ecology) has identified more than 5000 acres as highly contaminated. Some of the contaminated acreage may recover naturally without cleanup if the sources of contamination are controlled, but the majority is scheduled for cleanup activities.

Partners in cleaning up contaminated sites and sediments

Ecology and/or the Environmental Protection Agency (EPA) manage each site as it moves through the stages of the cleanup process. In some cases, no responsible party is identified or able to fund the cleanup, and those sites are designated as orphan sites. The

state departments of Natural Resources (DNR), Transportation, and Fish and Wildlife, as well as ports and local governments, clean up these orphan sites and sites on public lands. Ecology, EPA and others monitor cleaned up sites to identify and address causes of recontamination. Recontaminated sediments may not be related to the original source but rather from new sources such as stormwater, and may include new contaminants.

In 1988, agencies in Puget Sound completed the Puget Sound Dredged Disposal Analysis and adopted comprehensive testing requirements and limits on dredged material allowed for disposal at unconfined open water sites. Washington State passed the Model Toxics Control Act (MTCA), the state's contaminated site cleanup law, in 1989. Ecology adopted comprehensive sediment management standards for Puget Sound in 1991.

Ecology is the state's lead agency in site cleanup, and administers the state's sediment management standards. EPA is the federal lead agency for site cleanups under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Ecology and EPA focus resources on cleaning up the "worst sites first" to remove the greatest risks to public health and the environment. To date, EPA and Ecology have addressed over 850 acres of contaminated sediments in Puget Sound.

The Northwest Straits Commission (NWSC), the Department of Natural Resources (DNR), NOAA and other partners are working to inventory and remove creosote-soaked logs from Puget Sound beaches. DNR and State Parks and the Washington State Department of Transportation (WSDOT) are removing creosote-soaked pilings on state-owned aquatic lands, in state parks, and at Washington State Ferry facilities. Creosote wood can be a source of PAHs in Puget Sound waters.

Proposed 2007-2009 strategies for cleaning up contaminated sites and sediments.

1. **Continue to identify and clean up contaminated sites.**
2. **Manage navigation dredging operations to clean up contaminated areas whenever possible and prevent contamination of unconfined disposal sites.**

Proposed results for cleaning up contaminated sites and sediments.

1. **<u>Continue to identify and clean up contaminated sites.</u>**
   a. The total number of upland and aquatic sites within one half mile of the Puget Sound shoreline that are remediated under the authority of Ecology increases by 50 sites. (Ecology – additional funding requested, DNR – additional funding requested)
   b. Progress is documented on cleanups at Ecology-led High Priority Hazardous Waste facilities consistent with Ecology's agreements with EPA, including the Performance Partnership Agreement. (Ecology)

c. 5,000 acres are evaluated to assess whether cleanup is needed and new sites entered into Ecology's Integrated Site Information System for reporting progress and performance. (Ecology)

d. An inventory of creosote logs is conducted on Puget Sound beaches and a clean-up program is implemented. (NWSC, NOAA, DNR, The Nature Conservancy)

e. 700-800 tons of creosote-soaked logs are removed from Puget Sound beaches. (DNR, State Parks – additional funding requested)

f. 5000 tons of creosote pilings are removed from the Puget Sound marine environment. (DNR, State Parks – additional funding requested, WSDOT/Washington State Ferries)

g. A program to partially or completely reopen shellfish tracts in Dumas Bay in King County is facilitated through monitoring, shoreline surveys, a stakeholder process, and developing remedial alternatives for cleanup of state-owned aquatic lands. (DNR – additional funding requested)

h. The Superfund program is on track toward a 2011 goal of remediation of 200 acres of contaminated sediments in Puget Sound. (EPA)

i. Sediments contaminated with wood waste from old log dumps are cleaned up in ___ state parks. (State Parks – additional funding requested)

2. **Manage navigation dredging operations to clean up contaminated areas whenever possible and prevent contamination of unconfined disposal sites**.

a. All unconfined disposal sites meet site monitoring goals. (DNR)

b. All contaminated marine sites are remediated with clean material from navigation dredging. (Ecology)

Priority 2: Prevent toxic contamination

Long-term goal: Eliminate the harm from toxic pollutants entering Puget Sound.

While cleaning up contaminated sites and sediments (see page 6) helps to correct the legacy of historic toxic contamination, this priority focuses on reducing ongoing contamination and preventing future contamination. Toxic contaminants continue to harm Puget Sound in the following key areas:

- **People put their health at risk when they eat contaminated seafood from Puget Sound.** For example, Persistent Bioaccumulative Toxins (PBTs) in Puget Sound seafood may cause developmental effects in children.
- **Toxics contaminants harm marine life in Puget Sound**. Continued exposure to toxic chemicals harm marine life in the region's urban bays. For example, exposure to some pesticides and PBTs suppresses the immune function of salmon and marine mammals.
- **Future risks are unknown**. Harm from emerging contaminants, such as pharmaceuticals and personal care products, and the increase in pollution due to expected population growth is poorly understood.

In 2004, large industrial facilities (such as petroleum refineries, pulp mills, and other manufacturing plants) discharged about 4,300 pounds of the toxic chemicals that harm or threaten Puget Sound (such as polyaromatic hydrocarbons or PAHs, mercury, lead, and copper) into surface waters in the basin. The approximately 65 sewage treatment plants that discharge roughly 600 million gallons per day of treated wastewater contribute more contaminants, but the exact amounts are not available. Air emissions from large industrial facilities in the Puget Sound basin in 2004 included 34,000 pounds of the toxic chemicals that harm or threaten Puget Sound, and diesel engines in trucks, cars, ships, locomotives, and other equipment released about 8 million pounds of diesel soot into the air in the Puget Sound basin. Air contaminants from global sources also reach the Puget Sound region. The magnitude and geographic extent of ongoing toxic releases into the basin is a significant threat to the system's long-term health.

As our population increases, it is likely that the flow of chemicals from households and businesses into our municipal sewage treatment plants will increase. Toxic compounds that are not completely removed by conventional wastewater treatment plants will reach the environment in greater quantities. These releases include a mixture of largely unstudied chemicals (from medicines, fragrances, creams and other consumer products referred to collectively as pharmaceuticals and personal care products or PPCPs) that pass though humans and our households, into and through sewage treatment plants, and ultimately into the water and the aquatic food web.

Partners in preventing toxic contamination

Action Team partners are working to improve our ability to remove toxic substances at both the "end of the pipe" by treating and reclaiming wastewater and the "beginning of the pipe" in the production process and in consumer behaviors.

Washington State has an initiative to phase out persistent bioaccumulative toxins (PBTs) through a strategy led by the Department of Ecology (Ecology), and involving key support from the Department of Health (Health). Ecology and Health are implementing chemical action plans (CAPs) for mercury and for flame retardants (polybrominated diphenyl ethers) known as PBDEs, which have been found in human breast milk and the marine food web.

Efforts to phase out the generation and use of PBTs are underway worldwide. Ecology recently adopted the PBT regulation (Chapter 173-333 WAC). The rule contains a list of chemicals defined as PBTs, lays out a process to set priorities and schedule future chemical action plans and establishes procedures for developing these plans. Legislation passed in 2006 at Ecology's request establishes a program for manufacturers of certain electronic products to implement and finance recycling of electronic waste, one source of PBDEs and other toxic substances.

Ecology has proposed a PBT schedule for 2007-2009 that includes completing a CAP for for lead and initiating plans for PAHs and perfluorinated octynal sulfonate (PFOS). Lead is used in tire balancing weights, fishing equipment, solder, car batteries and various consumer products. Polycyclic aromatic hydrocarbons (PAHs) are a group of chemicals formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco. PAHs are found throughout the environment. They are of particular concern regarding air pollution and some marine life. PFOS was the key ingredient in the fabric protector Scotchgard, but 3M stopped using the chemical in 2002. The chemical is still used in a wide in a variety of industrial and consumer products. They include firefighting foam, waterproof clothing, and wrapping for microwave popcorn and other food products. PFOS is extremely resistant to environmental breakdown and has been found in polar bears in the Arctic, dolphins in Florida, seals and otters in California, albatross in the mid-Pacific and in people worldwide.

Ecology's approach to preventing toxic substances from entering the waste stream includes technical and engineering assistance for businesses to redesign their systems in order to reduce the production and use of toxic chemicals. For example, the Technical Resources for Engineering Efficiency (TREE) program provides no-cost audits that generate suggestions to help businesses increase efficiency, reduce supply costs, decrease hazardous waste disposal costs, and reduce toxic substances in the waste stream.

Ecology issues permits for municipal and industrial discharges under the National Pollutant Discharge Elimination System program. Ecology also works with communities

that have municipal wastewater treatment plants to increase the volume of reclaimed wastewater for conservation and reuse, as well as to decrease the waste discharged to Puget Sound. Ecology and Health will work together to carry out 2006 legislation requiring that they develop and adopt rules for use of reclaimed water and gray water, and to determine the related permitting responsibilities for each agency.

Stormwater carries a significant amount of toxic pollutants, especially from air emissions deposited on land and from commercial areas and roads. Reducing the harm from stormwater runoff is a separate priority in this plan (see page 15). Ecology and regional clean air agencies regulate air emissions from stationary and mobile sources, are collaborating on programs to reduce emissions of diesel soot from fleets of school buses and other government vehicles, and are working with Ports and others to understand the diesel emissions from maritime activities.

Ecology's Spill Prevention, Preparedness and Response Program's efforts include ship inspections, marine terminal spill prevention plans and inspections, and administering the Neah Bay rescue tug that assists disabled vessels. Spill preparedness initiatives include regional response planning, oil spill preparedness drills and multi-agency training. The program is also the state's lead agency for providing around-the-clock assistance to oil and hazardous material spills. The 2006 legislature adopted more protective standards for oil transfer operations at Ecology's request. The Oil Spill Advisory Council in the Governor's Office will issue recommendations for a state of the art oil spill prevention program and sustainable funding options for the oil spill program in September 2006. (Update in November 06)

The Washington Department of Agriculture (WSDA) works with the agricultural community to develop and implement integrated pest management plans and collects waste pesticides and other hazardous materials to ensure safe disposal. Individual citizen behaviors contribute toxic substances to the environment through poor vehicle and boater maintenance, landscaping practices, and disposal of some household products through onsite sewage systems. The Action Team staff, Ecology, Health, Washington Sea Grant Program, Washington State University Extension and others conduct education and involvement activities to change behaviors and reduce this source of contamination. Partners in local governments and non-profit organizations in Puget Sound communities promote and reward sustainable business practices.

Proposed 2007-2009 strategies for preventing toxic contamination.

1. **Reduce the use and generation of toxic chemicals.**
2. **Reduce the release of toxic chemicals to the environment.**
3. **Improve spill prevention and response**.
4. **Educate residents to change behaviors to reduce toxic contamination.**
5. **Study toxics in Puget Sound**.

Proposed results for preventing toxic contamination

1. **Reduce the use and generation of toxic chemicals**.
   a. 550 pounds of mercury reduction from waste streams is achieved through voluntary programs, pollution prevention planning, regulatory requirements and other innovative efforts. This represents a 40 percent improvement over the previous biennium. (Ecology, Health)
   b. A chemical action plan for lead is proposed to be completed in 2008 (as described in the "multiyear schedule" specified in the recently adopted PBT rule). (Ecology, Health). VERIFY CHEMICAL IN LATE 06.
   c. Chemical action plans for polyaromatic hydrocarbons (PAHs) and pefluorinated octynal sulfonates (PFOS) are proposed for initiation during the 2007-09 biennium (as described in the PBT multiyear schedule). (Ecology, Health) VERIFY NAMES OF CHEMICALS IN LATE 06
   d. One industrial facility receives engineering or other technical assistance to suggest quantifiable reductions in toxics use through Ecology's Technical Resources for Engineering Efficiency (TREE) and Lean Manufacturing programs. (Ecology)

2. **Reduce the release of toxic chemicals to the environment**.
   a. A 800 ton reduction of toxic emission and waste generation in the Puget Sound basin is reported by the regulated community implementing hazardous waste, pollution prevention, toxics use reduction, Environmental management Systems, and other innovative programs. (Ecology)
   b. 150 entities in the Puget Sound basin participate in environmental leadership or performance-based regulatory programs. (Ecology)
   c. Emissions of diesel particulate matter are reduced by 5 percent over the 2006 baseline. (Ecology)
   d. Amount of reclaimed water in Puget Sound increases by 2 million gallons per day or by 10 percent during the course of the biennium. (Ecology)
   e. Cross-agency and external work groups are convened to develop reclaimed water standards. (Ecology, Health)
   f. 90 percent of NPDES permits for municipal sewage treatment plants have been issued within the past five years. (Ecology)
   g. 90 percent of NPDES permits for industrial facilities have been issued within the past five years. (Ecology)

h. Six events to collect unusable, cancelled or suspended pesticides are held in the Puget Sound basin. Historic rates of collection suggest that 60,000 pounds of pesticides might be collected through these events. (WSDA)

i. The Puget Sound Naval Shipyard facility is issued an NPDES industrial discharge permit. (EPA)

j. Building upon Ecology's pharmaceutical and personal care product (PPCP) literature survey and county drug take back programs, partners will be convened to develop a statewide strategy to reduce the release of PPCPs in the marine environment. (PSAT)

k. Baseline loading of mercury from individual, non-stormwater point dischargers are estimated. (Ecology)

l. Permitted loadings of toxic contaminants from individual, non-stormwater point dischargers are estimated. (Ecology)

3. **Improve spill prevention and response**.

a. The number of significant oil spills reaching surface waters is decreased. (Ecology)

b. The percent of large commercial vessels having incidents that can lead to oil spills is reduced by 5 percent. "Incidents" refer to occurrences such as propulsion losses, steering failures, collisions, structural failures, fires, or spills. (Ecology)

c. All significant spills receive a rapid and aggressive response. (Ecology)

d. 400 ship inspections and 450 oil transfer inspections are conducted from July 07 to July 08; 450 ship inspections and 650 oil transfer inspections are conducted from July 08 to July 09. (Ecology)

e. Oil Spill Advisory Council recommendations that are adopted and fully funded by the legislature are implemented. (Ecology)

f. Local and tribal governments and Marine Resource Committees are involved in developing oil spill Geographic Response Plans. (Ecology)

g. A study is conducted to quantify the extent of annual pollution of small spills of less than 25 gallons in Puget Sound waters, identify the primary causes and sources, and evaluate the water quality effects. (Sea Grant – additional funding requested)

4. **Educate residents to change behaviors to reduce toxic contamination**.

a. Eight marinas reached with spill prevention education will achieve Clean Marina status. (Sea Grant – additional funding requested)

b. 30 Puget Sound shellfish growers receive spill prevention and preparedness education and training. (Sea Grant)

c. 100 commercial fishermen receive spill prevention outreach aimed at eliminating fuel spills and bilge discharges. (Sea Grant – additional funding requested)

d. Agricultural users receive education on pesticide application to minimize adverse environmental impacts. (WSDA)

e. 500 homeowners and 500 boat owners will adopt least toxic cleaning alternative practices and demonstrate improved literacy of consumer label reading of commercially available products. (Sea Grant)

5. **Study toxics in Puget Sound.**

a. A characterization of the status and trends of toxic contamination and their effects in the Puget Sound ecosystem is coordinated, with newly identified contaminants of concern included in the characterization. (PSAMP and PSAT, EPA, U.S. Fish and Wildlife Service, WDFW, Health)

b. The contributions of key toxic contaminants from terrestrial, atmospheric and marine discharge sources are determined. This information is used to determine toxic loading. (PSAT – additional funding requested)

c. Begin an effort to characterize atmospheric deposition to Puget Sound. (Ecology)

d. A literature review is conducted of pharmaceuticals and personal care products (PPCPs) in ground and surface water, and wastewater treatment capabilities to assess impacts on human health and the environment. (Ecology)

Priority 3: Prevent harm from stormwater runoff

Long-term goal: Stormwater runoff and combined sewer overflows do not impair water quality in all waters of the basin.

Stormwater runoff presents a high risk to the health of Puget Sound. Two species of salmon and bull trout are listed as threatened under the federal Endangered Species Act, and loss of habitat due to stormwater is one factor limiting recovery. In many shellfish growing areas, stormwater runoff contributes to harvest restrictions or closures. Many state waters fail to meet water quality standards in part due to stormwater. The U.S. Environmental Protection Agency (EPA) cites stormwater runoff as one of the greatest threats to the health of the nation's waters.

Stormwater runoff causes two major problems. First, it transports a mixture of pollutants from roads, parking lots, lawns, and other developed lands to the Sound, degrading water quality and harming species as it moves throughout the food web. Pollutants include toxic petroleum products and heavy metals from vehicles and industries, fertilizers and pesticides from homes and farms, animal wastes, and sediment from construction sites. In older areas of the basin, stormwater carried in storm drainage systems is discharged with little or no water quality treatment. In areas with combined sanitary and storm sewers, during heavy rains a mixture of stormwater and raw sewage can spill into the Sound in events called combined sewer overflows (CSOs).

The second major problem is that during the wet season, the volume and peak flow of runoff increases dramatically. This effect is greater where development has hardened the land surface and stormwater is collected and conveyed to receiving waters in piped systems. High volumes can erode stream channels and greatly alter and damage fish and wildlife habitat and can increase flooding in areas downstream. Improving stormwater management to protect habitat is especially important as state agencies and Puget Sound watersheds carry out actions to recover threatened species in the Puget Sound salmon recovery plans.

This risk to the Sound is magnified by predicted population growth and the limitations of current stormwater practices to fully manage the effects of development. Traditional development practices have led to significant loss of forest cover and increases in impervious surfaces. To protect Puget Sound, state and local governments and increasing numbers of developers are placing greater emphasis on innovative low impact development (LID) practices and other cost-effective solutions for new developments, and on retrofitting outdated stormwater facilities.

Partners in preventing harm from stormwater runoff

The Department of Ecology (Ecology) issues and oversees general stormwater permits for industrial, municipal and construction activities under the National Pollutant

Discharge Elimination System (NPDES) program mandated by the federal Clean Water Act. Perhaps the most significant action coming up on stormwater will be the issuance of a new municipal permit that will cover some 76 smaller cities and towns in Puget Sound and smaller construction sites under NPDES Phase II permits scheduled to be issued in December 2006.

A revised general construction permit was issued and subsequently appealed. Despite the appeal, the construction permit remains in effect. The Pollution Control Hearings Board will hear and rule on the appeal. The Washington State Department of Transportation (WSDOT), now covered under the Phase I permit for its highways in Phase I jurisdictions, will be issued its own permit in 2007 that will satisfy both Phase I and II requirements. The five most populous local governments will be covered by a reissued NPDES Phase I municipal general permit, also in December 2006. An updated general industrial permit is scheduled to be issued in September 2007.

Technical assistance, guidance, and some funding is available from Ecology, Puget Sound Action Team (Action Team) staff and the departments of Fish and Wildlife and Community, Trade and Economic Development.

In Puget Sound, 10 jurisdictions are still working to reduce the number and volume of CSO events. Ecology oversees each local government's reduction plan and administers the state revolving fund loans used to correct and retrofit systems so as to reduce overflows of untreated sewage during heavy rainstorms.

The Action Team staff works with all Puget Sound local governments to adopt the local comprehensive stormwater program from the *Puget Sound Water Quality Management Plan*. The local comprehensive program includes all of the minimum requirements of Phase II NPDES permits as well as several additional elements to protect habitat and water quality, such as identifying and ranking existing problems and conducting environmental and programmatic monitoring.

One element of the comprehensive program is promoting the use of innovative LID measures. Action Team staff, Ecology, WSU Extension, WSDOT, conservation districts, local governments and others in academia and the private sector are providing funding, support, technical assistance, education and research to increase information and projects in Puget Sound. Projects using this innovative approach preserve native vegetation and soils, reduce and disconnect impervious surfaces, and use small-scale controls at a site level to manage, treat and where appropriate, infiltrate stormwater runoff. As more local governments amend regulations to encourage or require these practices, there are increasing numbers of cost-effective, on-the-ground projects that demonstrate success in reducing the environmental effects of development.

WSDOT manages stormwater from state highways and other transportation facilities according to requirements in its NPDES permit and an updated highway runoff manual.

WSDOT is an important partner in preventing harm from stormwater runoff because highways comprise significant paved surfaces in the state and these surfaces can transport pollutants from vehicles if the stormwater is not adequately treated. WSDOT also plays an important role in managing erosion and sediment at highway construction project sites.

Proposed 2007-2009 strategies for preventing harm from stormwater runoff.

1. **Bring permittees into compliance with requirements of NPDES general stormwater permits.**
2. **Bring Puget Sound jurisdictions both inside and outside of the NPDES permit processes into conformance with the Puget Sound comprehensive stormwater management program.**
3. **Increase the use of LID techniques where appropriate, and help ensure that the LID approach is the first, preferred option considered to develop land and manage stormwater.**
4. **Manage runoff from state highways according to an updated highway runoff manual, retrofit existing facilities and monitor management practices.**
5. **Continue to reduce the number and volume of Combined Sewer Overflow events.**
6. **Develop and begin to implement a Sound-wide monitoring program to better understand the impacts of stormwater runoff on Puget Sound and the effectiveness of management practices.**
7. **Increase small acreage landowner technical assistance and voluntary incentive programs.**
8. **Educate and involve the public in preventing harm from stormwater runoff.**

Proposed results for preventing harm from stormwater runoff.

1. **Bring permittees into compliance with requirements of NPDES general stormwater permits**.
   a. Ecology will report on the number and percent of NPDES municipal general permittees meeting the compliance schedule. (Ecology)
   b. All NPDES municipal general permittees receive technical assistance to help them comply with the permits. (Ecology)
   c. The NPDES general industrial stormwater permit is reissued by September 2007. (Ecology)
   d. Ecology staff carry out an average of one stormwater inspection every two years at permitted construction sites. (Ecology)
   e. Ecology staff carry out an average of one stormwater inspection every two years at permitted industrial facilities. (Ecology)

2. **Bring Puget Sound jurisdictions both inside and outside of the NPDES permit processes into compliance with the comprehensive stormwater program called for in the *Puget Sound Water Quality Management Plan***.

   a. The number of local governments adopting the elements of the Puget Sound comprehensive local stormwater management programs increases by 20 percent during the biennium. (PSAT)

   b. Assistance is provided to 25 jurisdictions to help them develop comprehensive stormwater programs and link salmon recovery efforts, land use planning, and watershed planning to stormwater programs. (PSAT)

   c. Thurston County receives assistance to implement the results of the Henderson Inlet stormwater basin planning project. (PSAT, EPA)

3. **Increase the use of LID techniques where appropriate and help ensure that the LID approach is the first, preferred option considered to develop land and manage stormwater**.

   a. Four (or up to 16 with additional funding) local governments adopt or revise regulations to allow for or encourage the use of LID techniques. (PSAT – additional funding requested)

   b. LID projects funded under the LID grants program are tracked, and reports on the projects are available. (Ecology will track projects and PSAT will analyze and disseminate information on them.- additional funding requested by Ecology)

   c. The LID Technical Guidance Manual for Puget Sound is updated, based on monitoring results and research. (PSAT, WSU Extension)

   d. Additional focused LID training is made available to local government staff, the development community, consultants and others. (PSAT staff—additional funding requested, WSU Extension)

   e. ____state parks use low impact development techniques to eliminate direct discharge into Puget Sound and Hood Canal. (State Parks – additional funding requested) PROVIDE TARGET IN FALL 2006

   f. Pollution monitoring studies are conducted to document LID benefits to receiving waters and downstream aquatic resources. (EPA)

   g. A local case study assesses the economic value of natural environmental services provided by “green infrastructure” in meeting stormwater management objectives. (EPA)

   h. Developers and private landowners receive technical assistance from conservation districts for use of LID techniques for new development and re-development projects. (WSCC-additional statewide funding requested)

4. **Manage runoff from state highways according to an updated highway runoff manual, retrofit existing facilities and monitor management practices**.
   a. Of construction sites considered to be moderate to high risk to cause erosion, attain 90 percent compliance with all 13 erosion and sediment control assessment measures. (WSDOT)
   b. 29 stormwater retrofits for existing impervious surfaces are completed for prioritized outfalls from a state highways where high-volume traffic drains to sensitive water bodies. (WSDOT)
   c. Runoff treatment and flow-control best management practices to mitigate the impacts of new impervious surfaces are implemented as part of transportation construction projects. (WSDOT)
   d. 7,500 stormwater outfalls and tributary conveyances will be identified and mapped as part of compliance with the NPDES permit. (WSDOT)
   e. Significant inland oil spills and hazardous material incidents receive a rapid and aggressive response to clean them up. (Ecology)

5. **Continue to reduce the number and volume of CSO events to Puget Sound.**
   a. The overall number of CSO events and total volume of overflows decreases, taking into account fluctuations in precipitation. (Ecology)

6. **Develop and begin to implement a Soundwide monitoring program to better understand the impacts of stormwater runoff on Puget Sound and the effectiveness of management practices**.
   a. A comprehensive monitoring program is begun to better understand the impacts of stormwater runoff on Puget Sound and the effectiveness of management practices. (Ecology – additional funding requested)
   b. All stormwater outfalls authorized by DNR on state-owned aquatic lands are identified in a Geographic Information Systems database. (DNR)
   c. Increased exchange of information and protocols between 125 researchers and practitioners through a Puget Sound LID stormwater monitoring forum. (WSU Extension)

7. **Increase small acreage landowner technical assistance and voluntary incentive programs**.
   a. 1,360 private small acreage landowners receive technical assistance from conservation districts to reduce contamination and volume of stormwater runoff. (WSCC— additional funding required, WSU Extension)

b. 300 private small acreage landowners implement best management practices to reduce contamination and volume of stormwater runoff. (WSCC-additional funding requested)

8. **Educate and involve the public in preventing harm from stormwater runoff.**

   a. At least one shellfish growing area threatened or degraded by stormwater runoff is upgraded or protected. (Health, PSAT, Ecology)

   b. At least 10,000 homeowners, vehicle owners, members of the real estate and development community, and state, tribal and local government staff increase their knowledge, skills and motivation to change behaviors and practices to reduce contamination and volume of stormwater runoff. This will include awarding 8,000 clock hours to real estate professionals. (WSU Extension)

   c. 75 percent of local governments will provide public education and involvement opportunities to citizens. (PSAT)

   d. 300 homeowners implement best management practices to prevent stormwater runoff from their properties. (Sea Grant).

Priority 4: Prevent nutrient and pathogen pollution

Long-term goal: Nutrient and pathogen pollution meets water quality standards and protects public health in all Puget Sound waters.

Puget Sound's marine and fresh waters are vulnerable to nutrient and pathogen pollution from an array of human and animal sources, including municipal sewage treatment plants; onsite sewage systems; stormwater runoff and combined sewer overflows; agricultural, forest and landscaping practices; ship/boater discharges; pet waste; and wildlife. Nutrients, particularly different forms of nitrogen, can enrich estuarine and marine waters and cause a number of problems, including algal blooms that can take up oxygen when they die and reduce the oxygen available to other aquatic life. This is the condition that led the Action Team partners to place a special focus on Hood Canal, where extremely low oxygen levels led to fish die-offs in recent years (see page 27). In addition to Hood Canal, Puget Sound has other areas such as the South Sound and the Whidbey Basin that are particularly susceptible to nutrient pollution.

Pathogens are disease-causing microorganisms. They include a variety of protozoan parasites, bacteria and viruses that can contaminate shellfish beds, swimming beaches, and other water resources, and can harm humans, aquatic life and ecosystem functions. Pathogen pollution in some areas of Puget Sound exceeds water quality standards.

Clean water is particularly important to the abundant shellfish resources of Puget Sound and to preserving Washington State's position as the nation's leading producer of farmed bivalve shellfish. Shellfish resources are a significant cultural and economic resource for Puget Sound tribes and also provide a recreational asset enjoyed by other residents of the region and by tourists who contribute to the state's economy. An estimated 165,000 acres of in Puget Sound are classified by the Department of Health (Health) for harvest. Out of that total, approximately 28,000 acres are restricted or prohibited for commercial and recreational harvest.

Research indicates that pathogen and nutrient pollution is closely associated with the region's large and fast-growing population and rapidly urbanizing landscape. In recent decades, updated municipal sewage treatment plants dramatically lowered the concentration of many conventional pollutants discharged to Puget Sound. However, population growth and higher discharge volumes have offset some of these gains, and some pollutants—including nutrients—have received limited attention. Residents living outside urban areas are served by an estimated half-million onsite sewage systems that can contaminate Puget Sound if they do not provide effective treatment and are not managed to prevent failures.

Livestock and pet wastes contribute to nutrient and pathogen pollution when they are not properly managed. Some commercial livestock operations are covered under the state

dairy nutrient management program or the water quality permit program. Thousands of small-acreage operations are not regulated and may lack effective waste management practices. In addition, fertilizers that are applied in agriculture, forestry or landscaping include nutrients that are carried to streams and marine waters in surface and stormwater runoff. Some nutrients infiltrate to reach groundwater and can impair drinking water supplies.

Dramatic increases in passenger ship traffic raise questions about wastewater discharges, treatment methods, and potential impacts associated with these vessels. A companion concern—discharges from the nearly 180,000 registered boats in the region—underscores the continued need for accessible and functional boat pumpout facilities and consideration of more carefully regulated discharge zones.

Partners in preventing nutrient and pathogen pollution

Many entities work to reduce nutrient and pathogen pollution in Puget Sound. These include state agencies, local governments, not-for-profit organizations, educational institutions and individuals. State agencies that play major roles include the Departments of Ecology (Ecology), Health (Health), Agriculture (WSDA), the State Parks and Recreation Commission (State Parks), the Conservation Commission (WSCC), and the state universities.

Health monitors and classifies shellfish growing areas and supports water quality restoration activities when shellfish areas are threatened or closed to harvest. Health, Ecology, WSDA and Action Team staffs support the shellfish restoration efforts of local governments, farmers, shellfish growers, tribes and others.

Health works with local health authorities to develop plans and programs to regulate onsite sewage systems. As the region's population grows, the legislature, the State Board of Health and state agencies are increasing support and requirements for responsible management of onsite sewage systems, particularly those used in high-risk areas where sensitive resources are easily polluted. Health also reviews and approves new technologies to help ensure that onsite sewage treatment options are available to meet a variety of site conditions. Health shares responsibility with Ecology in regulating large onsite sewage systems that serve small communities. Legislation passed in 2006 requires Puget Sound local health authorities to develop program management plans to strengthen their efforts to prevent onsite sewage systems from contributing to water quality problems. New legislation also directs Ecology to provide financial and technical assistance to local and tribal governments to fund grants and expanded loan programs for system replacement and repair.

Ecology issues permits and monitors the performance of sewage treatment plants under the National Pollutant Discharge Elimination System (NPDES) mandated by the federal Clean Water Act. Ecology monitors discharges from large passenger ships under the

terms of a memorandum of understanding with the industry. Health is undertaking studies to assess the need for shellfish closure zones around passenger ships.

Ecology is required under the Clean Water Act to develop water cleanup plans for waters that do not meet state water quality standards. Ecology, with state and local partners, is working with different partners to develop and implement Water Quality Improvement Plans to address problems associated nutrients, dissolved oxygen, and fecal coliform bacteria. Ecology administers grant and loan funds for projects throughout the Sound to improve water quality and to build or update sewage and stormwater infrastructure. Because a large portion of the pollution is from diffuse, scattered and small sources, Ecology and other Action Team partners implement the state's plan to prevent and reduce this "nonpoint" pollution.

The WSDA administers the Dairy Nutrient Management Program that regulates licensed dairies through planning and site management requirements, regular inspections and compliance assistance in preventing pollution. WSDA also responds to complaints about certain livestock operations and coordinates with Ecology on inspections of non-dairy animal feeding operations that are covered by the NPDES Concentrated Animal Feeding Operation (CAFO) permit program. The Conservation Commission and conservation districts in each county educate landowners and provide voluntary and incentive programs to help owners of small and large operations prevent pollution by managing animal waste.

The State Parks provides public education and manages sewage disposal facilities at state parks. In addition, State Parks funds construction of pumpouts for disposal of boat sewage, and works with other educators to encourage boaters to use these facilities.

Regulatory programs help reduce pollution from many sources, but education and voluntary actions are critical to reducing sources of nutrient and pathogen pollution from individual homes, small farms and businesses across the basin. The Washington Sea Grant program, Washington State University (WSU) Extension, Action Team staff, conservation districts and other state, tribal, local and federal partners work with local communities to offer alternatives and programs that change polluting behaviors.

Proposed 2007-2009 strategies to prevent nutrient and pathogen pollution

1. **Focus efforts and resources in high-risk areas most vulnerable to the effects of pathogen and nutrient pollution.**
2. **Improve state agency coordination and implementation.**
3. **Support effective and innovative regulatory and non-regulatory approaches.**
4. **Strengthen the capacity of local jurisdictions to design and implement effective and comprehensive programs.**
5. **Educate and involve residents and others to enhance stewardship activities.**

6. Improve scientific understanding of nutrient and pathogen pollution problems to guide management activities.

Proposed results to prevent nutrient and pathogen pollution

1. **<u>Focus efforts and resources in high-risk areas most vulnerable to the effects of pathogen and nutrient pollution</u>**.
   a. A net gain of 500 commercial and recreational shellfish acres per year based on improvements in water quality or pollution controls. (Health)
   b. Restoration projects are conducted at 12 commercial or recreational shellfish areas that are degraded or threatened. (Health)
   c. At least 2 shellfish growing areas degraded or threatened by discharges from concentrations of onsite sewage systems are upgraded or protected. (Health)
   d. Classification of all recreational beaches with an average use of greater than 500 harvesters per year is initiated over a three-year period. (Health)
   e. The percent of 60 core monitoring beaches that exceed bacteria standards for safe swimming decreases over the biennium. (Ecology, Health)
   f. Wastewater treatment plant design, permitting and construction for the City of Oak Harbor in the Whidbey Basin and the Squaxin Tribal Village in south Puget Sound. (EPA funds tribal/local governments)

2. **<u>Improve state agency coordination and implementation</u>**.
   a. The volume of boater waste collected at pump outs, as a result of State Parks education and provision of pump out facilities, increases by 5 percent during the biennium, based on a current annual estimate of approximately 2.8 million gallons collected. (State Parks)
   b. 14 boater waste facilities are installed or replaced in Puget Sound. (State Parks)
   c. A total of 8 Water Quality Improvement Reports focused on dissolved oxygen (2) and fecal coliform (6) are completed. (Ecology)
   d. The performance status of large onsite sewage systems is documented and the number of systems in compliance with Health and Ecology operating permits is increased by 24 percent. (Health)
   e. New or repaired sewage facilities are constructed at selected state parks, increasing to ___ the percentage of facilities that are in compliance with Health and Ecology operating permits. (State Parks will provide the number of Parks in June 2007)
   f. At least 74 percent of Puget Sound state parks have pet waste disposal stations installed to reduce pet waste. (State Parks)

g. The interagency Memorandum of Agreement guiding state agency responses to shellfish closures and threatened shellfish areas is updated. (PSAT, Health, Ecology, WSDA)

3. **Support effective and innovative regulatory and non-regulatory approaches.**

a. At least 90 percent of inspected Puget Sound dairies and 95 percent of permitted CAFO facilities are in compliance with state and federal water quality rules by the end of the biennium, as indicated by no need for follow-up inspections and no reported discharges. (WSDA)

b. Conservation districts approve and implement 400 best management practices on non-commercial livestock operations. (WSCC – additional funding requested)

c. Conservation districts approve and implement 60 best management practices on livestock operations that meet the definition of Animal Feeding Operations and CAFOs. (WSCC – additional funding requested)

d. Conservation districts complete 400 approved conservation plans. (WSCC – additional funding requested)

e. Comprehensive farm management training programs are provided for 250 small farm operators. (WSU Extension)

f. A National Pollutant Discharge Elimination System (NPDES) general permit is issued for tribal and federal hatchery wastewater discharges. (EPA)

4. **Strengthen the capacity of local jurisdictions to design and implement effective and comprehensive programs**.

a. All 12 Puget Sound local health jurisdictions are implementing onsite sewage program management plans approved by Health. (Health)

b. The number of local health jurisdictions with the data available to inventory and map onsite sewage systems in priority marine areas increases from 0 to 6. (Health)

c. Loan programs are in place in Puget Sound counties to fix failing onsite sewage systems. (Ecology manages contracts with local entities – additional funding requested)

5. **Educate and involve residents and others to enhance stewardship activities**.

a. Throughout Puget Sound, citizens engage in public education and involvement opportunities that change behavior and result in actions to reduce nutrient and pathogen pollution and to increase beneficial uses of state waters, including safe harvest of shellfish. (PSAT, WSU Extension, Sea Grant, State Parks)

b. 6,000 homeowners change their landscape practices to ensure that fertilizers applied to their yards do not migrate to surface waters. (Sea Grant, WSU Extension)

c. 500 homeowners will actively manage their tideland for shellfish culture, thereby filtering nutrient-rich phytoplankton from the water column. (Sea Grant)

d. 200 tideland owners will monitor, record, quantify, and map the varieties of macroalgae and shellfish residing on their beaches. (Sea Grant)

e. 150 environmental health professionals, conservation district staff, and environmental educators will participate in continuing education trainings regarding pathogen and nutrient pollution. (Sea Grant)

6. **Increase scientific understanding of nutrient and pathogen pollution problems to guide management activities**.

a.. Additional monitoring data is collected and work is begun on a dissolved oxygen and nutrient model for south Puget Sound. (Ecology)

b. An assessment of nitrogen loading begins for Puget Sound as a whole. (EPA)

Special Focus Area:
Low Dissolved Oxygen in Hood Canal

Hood Canal's deep marine waters are at serious risk from hypoxia, a lack of dissolved oxygen. While Hood Canal has had a history of low dissolved oxygen levels resulting in fish kills documented as far back as the early 1950s, monitoring data from 2002-3 found dissolved oxygen levels at their lowest in recorded history.

This problem caught the public's attention in the spring of 2002, the fall of 2003 and early fall of 2006 when dead fish and other marine life washed up on Hood Canal beaches, having essentially suffocated. During 2004, the canal's oxygen levels were the lowest in recorded history. The Canal experienced another major fish kill in 2006, and current measurements in deep waters of lower Hood Canal show that the oxygen decline continues, with levels approaching "anoxic," or nearly devoid of measurable oxygen.

In recent years the area of low dissolved oxygen has been getting larger, spreading northward from the Great Bend of the canal, and the periods of low dissolved oxygen are lasting longer throughout the year.

Many natural factors contribute to the low dissolved oxygen problem: slow water circulation and mixing, the incoming ocean water quality, changes in the weather, high growth of algae, loadings of carbon and nitrogen, and changes in the native marine life composition.

Human activities also affect the dissolved oxygen concentration in several ways, including altering the river flows, landscapes, and marine life, and adding excess nutrients to the waters that can fuel extra algae growth that takes up oxygen when it dies.

Determining the causes of the problem in Hood Canal and restoring water quality is critical to save the aquatic life of a unique part of Puget Sound. Solutions for Hood Canal will also help to prevent and address low dissolved oxygen problems elsewhere in Puget Sound. As the basin's population increases, work in Hood Canal to address nutrient pollution and low dissolved oxygen problems may be used in other areas of Puget Sound. (See page 18.)

Partners in restoring Hood Canal water quality

The Hood Canal Dissolved Oxygen Program (HCDOP) is a partnership of 38 organizations that conducts monitoring, modeling and analysis and develops corrective actions to address the human inputs of nitrogen that contribute to the low dissolved oxygen problem. The Puget Sound Action Team (Action Team) staff chair the HCDOP coordinating group and co-manage the corrective action and education component of the group with the Hood Canal Coordinating Council (HCCC). Action Team staff also coordinate a group of Action Team agencies that focus funding, technical assistance and

other resources on supporting HCDOP efforts. The HCDOP has three main areas of work: implementing early actions, developing scientific information to better determine the causes of the problem, and public education and involvement.

Action Team staff and the HCCC collaborated to produce the *Hood Canal Low Dissolved Oxygen Preliminary Assessment and Corrective Action Plan (PACA)* in May 2004. The plan identified the most likely human causes of nitrogen loading and the recommended actions that will help reduce the overall nitrogen inputs to Hood Canal. Federal and state funding initiated a series of early action projects to address human-caused pollution in October 2004.

In 2005, the legislature established the Hood Canal Aquatic Rehabilitation Zone and appropriated 20 million dollars to accelerate corrective actions. In 2006, an additional $6.1 million was added. Projects initiated and underway include: improvements to State Parks wastewater systems, shoreline water quality surveys to find pollution sources, loans for fixing failing onsite sewage systems, design of an anaerobic digester to treat organic waste, feasibility studies needed in advance of design phases to ultimately construct wastewater systems for the Skokomish to Hoodsport area and the Belfair area, education activities to improve stewardship, improvements to the state's Hoodsport fish hatchery to reduce pollution, and installing and monitoring onsite sewage systems with new technologies to reduce nitrogen.

Ecology, the Conservation Commission, the departments of Health (Health), Community, Trade and Economic Development (CTED), the Environmental Protection Agency (EPA) and other agencies provided technical assistance and advice for many of the projects.

The HCDOP Integrated Assessment and Modeling Study is a three-year study to use marine, freshwater and biota monitoring data to develop a computer model. The model will be used to determine the effect of various sources of nutrients on the dissolved oxygen levels and to evaluate the effect of proposed corrective actions. Federal funding supports work by the U.S. Geological Survey and the University of Washington Applied Physics Laboratory for the study. The study is a collaboration among 17 organizations. Based on the model results, the HCDOP will propose additional corrective actions to address the significant causes of the low dissolved oxygen.

Ecology and other HCDOP partners are presently sharing and coordinating work on monitoring and modeling.

The Hood Canal Watershed Education Network is a group of organizations that are conducting education and public involvement activities in the Hood Canal watershed. State agencies and Washington State University (WSU) Extension and Washington Sea Grant Program play an integral role in Hood Canal education efforts. The Action Team staff host a website for information about Hood Canal's water quality problems and what people can do to help, and publish a quarterly electronic newsletter about Hood Canal in

cooperation with the HCCC. Many of the HCDOP partners and other local organizations are working to build a citizen stewardship network to promote actions that reduce pollution.

Proposed 2007-2009 strategies for improving Hood Canal water quality

1. **Carry out early actions to help fix water quality problems in Hood Canal.**
2. **Strengthen local governments' abilities to correct existing pollution problems and to deal effectively with the impacts of increasing populations.**
3. **Improve the scientific understanding of Hood Canal and apply that understanding to solutions.**
4. **Communicate information to the media, legislature and the public about the water quality problem and what the partnership is doing to fix the problem.**
5. **Educate the public about the low dissolved oxygen problem and engage them in activities to improve water quality.**

Proposed results for improving Hood Canal water quality[1]

1. **Carry out early actions to help fix water quality problems in Hood Canal**. (State agencies are identified where they are managing contracts with local entities responsible for completing the work.)
   a. Assuming that Mason County stays on schedule to complete the facilities plan including engineering and design and required permits, construction begins for a sewage treatment system(s) in Skokomish-Hoodsport corridor. (Ecology manages contract for facilities design with Mason County; Parks coordinates wastewater facilities plans with wastewater treatment plans in the adjacent Potlatch area as appropriate.)
   b. Assuming that Mason County completes necessary facility plans, environmental review and other processes and permits, design/construction begins for a sewage treatment system for the Belfair Urban Growth Area and adjacent service area. (Ecology manages contract for facilities design with Mason County; CTED administers funds for construction; Parks coordinates wastewater facilities at Belfair State Park with the Belfair system as appropriate.)
   c. Shoreline surveys in Mason, Jefferson and Kitsap counties are completed, and failing onsite sewage systems are identified and addressed. (Ecology contract with local entities)

[1] Results listed are those that are unique to Hood Canal as a special focus area under this priority. A number of the Sound-wide results to prevent nutrient and pathogen pollution under the broader priority include work that will benefit Hood Canal.

d. Loan programs are in place in Mason, Jefferson and Kitsap counties to fix failing onsite sewage systems. (Ecology contract with local entities)

e. Stormwater management plans for Hoodsport and Belfair are completed, the overall Mason County stormwater program is enhanced, and initial actions are taken to implement recommendations of those plans. (Ecology contract with Mason County)

f. Construction of wastewater system at Dosewallips State Park and three other Hood Canal state parks is begun. (State Parks)

g. Construction of the Hoodsport fish hatchery wastewater treatment system is complete and the mass loading of nitrogen from this hatchery is reduced by 75 percent. (WDFW)

h. Fecal coliform bacteria concentrations in water draining to Hood Canal from the Skokomish River/Annas Bay watershed meet water quality standards. (Ecology)

i. Fecal coliform bacteria loading from the Union River meet water quality standards and Water Quality Improvement Plan targets. (Ecology)

2. **Strengthen local governments' abilities to correct existing pollution problems and to deal effectively with the impacts of increasing populations**.

a. A program to manage onsite sewage systems is adopted and implemented by local health boards. (State agencies assist Mason, Jefferson and Kitsap counties)

b. The findings of the 2005-2007 governance study are implemented. (HCCC)

c. An assessment is made of the effect of projected growth on the canal's nitrogen input and ultimately on dissolved oxygen. (HCDOP and the Integrated Assessment and Monitoring program, HCCC and local governments)

3. **Improve the scientific understanding of Hood Canal and apply that understanding to solutions**.

a. Science is used to inform corrective actions and to evaluate the effects of nutrient change on dissolved oxygen as coordinated by the HCDOP. (HCDOP partners, PSAT as state lead)

b. Sub-watersheds are identified where new and replacement onsite sewage systems need to incorporate nitrogen removal. (HCDOP)

c. The Integrated Assessment and Modeling study of Hood Canal is completed and used to evaluate the effect of various sources of nutrients on the dissolved oxygen levels and the effect of proposed corrective actions. (HCDOP partners)

d. Population surveys of deepwater geoduck and sea cucumbers are conducted to gather information on health, distribution and ecologic function. (DNR – additional funding requested, Ecology, Hood Canal Salmon Enhancement Group)

e. The second phase of a study of nitrogen pathways from onsite sewage systems entering Hood Canal is completed. (PSAT contracts with consultant – additional funding requested)

f. Monitoring of nitrogen-removing onsite sewage systems is conducted to evaluate the technologies. (PSAT contract with Jefferson County – additional funding requested)

g. Nitrogen reductions achieved from 2005-2007 corrective actions in Hood Canal are calculated. (EPA funds HCDOP partners)

4. **Communicate information to the media, legislature and the public about the water quality problem and what the partnership is doing to fix the problem**.

a. HCDOP works with the House Select Committee on Hood Canal to inform the legislature and the public about progress in restoring water quality in Hood Canal. (HCDOP partners)

b. The public is informed through eight quarterly newsletters, two Hood Canal Forums, and an updated Web site. (PSAT)

5. **Educate the public about the low dissolved oxygen problem and engage them in activities to improve water quality**.

a. 3,000 residents receive information about corrective actions in the Canal and resources to help them adopt behaviors that will protect the Canal. (WSU Extension, Sea Grant, PSAT)

b. 1,000 residents actively participate in stewardship programs and adopt canal-friendly practices in managing their homes and landscapes. (WSU Extension, Sea Grant)

c. Hood Canal education is coordinated and linked to ongoing research and monitoring, and educational materials are developed with messages that are scientifically accurate and updated as new information becomes available. (PSAT-additional funding requested)

Priority 5: Protect functioning marine and freshwater habitats

Long-term goal: Preserve marine and freshwater habitats and the ecological processes that create and maintain them.

Puget Sound's population has doubled from 2 million to 4 million since 1960 and is projected to reach 5.4 million by 2025. This growth has led to changes across the landscape that include loss of and damage to habitats for a number of species that are critical to the Puget Sound aquatic food web. Endangered Species Act listings of salmon and orca, the alarming declines in many other species, the list of polluted water bodies, the disappearance of nearshore habitats, the acres of closed shellfish harvest areas, and changes in streamflows and flooding patterns are evidence of the loss of habitats, the processes that support them and the functions they perform in the ecosystem.

In some parts of Puget Sound, the landscape is now urban. In less urbanized areas there is increasing pressure to accommodate growth by expanding development into remaining habitats. As growth continues, preserving functioning habitats and the associated ecological processes requires a combination of regulatory and voluntary approaches. Those efforts are connected to the work described under the priorities for restoring degraded habitats and for protecting species diversity (see pages 39 and 43).

In addition, aquatic nuisance species not native to the Sound can alter and destroy habitats and cause rapid and irreversible impacts to the ecosystem. The recent discovery of invasive colonial tunicates in areas of the Sound is an example of this threat. The experiences of other major estuaries in the United States that have high population growth rates, a large boating community, and international port facilities are a reminder that it is imperative that Puget Sound prepare to respond to such events to protect the Sound's ecosystem.

Land use regulations are necessary to protect public health and safety, public and private property, as well as public trust resources that benefit society and are needed to sustain future generations. Local governments protect habitats using a regulatory approach in large part by implementing the state Growth Management Act and Shoreline Management Act. By July 1, 2007 almost all Puget Sound local governments will have completed critical areas ordinances updates. A number of Puget Sound jurisdictions will be revising regulations to meet requirements of Ecology's Shoreline Master Program (SMP) Guidelines, which were updated in 2004 to improve protections for shoreline ecological functions.

Working lands such as well-managed agricultural and forest lands support habitat protection. Protecting working resource lands from conversion and urbanization is consistent with the state's goals in the Growth Management Act.

At the same time, local watersheds in Puget Sound are completing a period of significant watershed-based planning. Regional efforts funded in part by the state include Water Resources Inventory Area plans under the Watershed Planning Act, local watershed chapters of the *Draft Puget Sound Salmon Recovery Plan* coordinated by the Puget Sound Shared Strategy, and the recovery plan for Hood Canal Summer Chum Salmon developed by the Hood Canal Coordinating Council. In addition to completing and now implementing these plans, the local and tribal governments, agricultural, forestry and business interests, non-governmental organizations, and individual citizens who contributed to these efforts formed watershed groups. Watershed councils continue to benefit local communities as forums for finding cooperative solutions to natural resource questions. State agencies are responsible to implement state government actions, as well as to fund and assist local watersheds in making on-the-ground progress in local actions. State, tribal, local and citizen partnerships are also building stewardship networks of volunteers, homeowners, realtors, farmers, business and other interests to support habitat protection in communities across Puget Sound.

Partners in protecting functioning habitats

Many communities have land trusts, salmon recovery groups, conservation organizations and others working to purchase land and conservation easements in high-value habitat areas for permanent protection, as a voluntary approach to habitat conservation. Local governments provide tax incentives to landowners and often join as partners with conservation or restoration groups in acquiring land as part of a larger restoration project. The Cascade Agenda in King County led by the Cascade Land Conservancy is an example of a successful large-scale approach to protect habitats using innovative incentives and market-based tools.

The Office of the Interagency Committee (IAC) administers funding from several sources used by local groups to protect and restore habitat and purchase land and easements. The IAC also supports the state's Invasive Species Council and the Washington Biodiversity Council. The Department of Natural Resources (DNR) designates and manages aquatic reserves in Puget Sound for areas of special ecological value. Agencies that manage state-owned land such as DNR, the departments of Fish and Wildlife (WDFW), Transportation, and State Parks apply a conservation approach in the context of individual agency mandates.

State agencies that have developed computer-based watershed analysis tools are transferring these tools to local governments. These integrative tools provide better information to decision-makers by showing the combined effects of regulatory and voluntary actions on watershed and habitat-forming processes. Demonstration projects use these tools developed by resource scientists in Ecology, WDFW, and WSDOT to find practical solutions to watershed issues. Project partners include the Department of Community, Trade and Economic Development (CTED), Action Team staff, EPA, The Conservation Commission and other agencies.

As local governments begin to use newly updated regulations, state resource agencies provide improved scientific data, guidance, and training. CTED, as the lead agency for the Growth Management Act, coordinates among state agencies. Ecology leads efforts to assist local governments in updating local SMPs. Resource agencies such as WDFW, DNR, the departments of Agriculture (WSDA) and Health, and Action Team staff provide technical assistance, data, public education, and funding. The Conservation Commission (WSCC) helps to protect agricultural and forest resource lands and related habitat through technical assistance and cost-share programs to improve habitat and water quality.

WSDA leads the state's effort to monitor for and eradicate invasive spartina infestations in the state. The agency also prevents the introduction of invasive aquatic plants through its quarantine programs, and controls other invasive aquatic plants. The state Noxious Weed Control Board works with landowners to control and eradicate invasive aquatic plants infesting private property. Ecology provides technical and financial assistance to local governments and lake associations to manage and eradicate freshwater invasive weeds. WDFW regulates pathways and practices that introduce non-native animals, and responds to newly found invaders. Action Team staff coordinates and supports a number of activities, including staffing the state Ballast Water Committee, and coordinating the state's response to eradicate invasive tunicates recently found in Puget Sound. In 2006, the governor and the legislature provided emergency and supplemental funds to eradicate invasive non-native tunicates. The 2006 legislature also created a policy level Invasive Species Council to coordinate among state agencies on aquatic and terrestrial invasive species issues. The IAC will staff this council.(See section on restoring habitat pages 38-41 for work to eradicate invasive species.)

Building public awareness and stewardship is a cornerstone of the approach to habitat protection in many watersheds. Washington State University (WSU) Extension, Washington Sea Grant, Action Team staff, conservation districts, and others provide funding and assistance for public involvement and education efforts. Experts from most Action Team agencies assist in education and training. The rapid expansion of Beach Watcher and Shore Steward programs, and the Soundwide success of neighborhood bay and stream protection groups testifies to the growing commitment of Puget Sound's residents to protecting its habitats.

Proposed 2007-2009 strategies for protecting functioning habitats

1. **Preserve functioning habitats through a variety of conservation tools.**
2. **Help effectively update and implement regulations that protect functioning marine and freshwater habitats.**
3. **Integrate and implement local watershed, salmon recovery and other plans through regulatory and voluntary approaches.**
4. **Prevent the introduction of new aquatic nuisance species in Puget Sound through regulatory and volunteer approaches.**

5. **Develop a network of sustainable resources to support Sound-wide landowner education and stewardship.**
6. **Identify and fill information needs to monitor and improve the effectiveness of protection strategies.**

Proposed results for protecting functioning habitats

1. **<u>Preserve functioning habitats through a variety of conservation tools</u>**.
    a. Increase by 5,000 acres the ecologically important land that is permanently protected and properly managed. This will be accomplished through DNR aquatic reserves, WDFW land acquisition (fee simple and conservation easements), and land acquisitions funded by grants administered by the IAC, EPA, State Parks and Ecology.
    b. Designation of one aquatic reserve during the course of the biennium. (DNR)
    c. Environmental baseline data to support adaptive management is measured and compiled for each DNR Aquatic Reserve. (DNR)
    d. Protection of federally-listed endangered and threatened species potentially affected by DNR management actions on state-owned aquatic lands. (DNR – additional funding requested)
    e. The Office of Farmland Preservation is created to provide technical and financial assistance to local groups and governments for economic incentives to protect agricultural lands from development. (WSCC)

2. **<u>Help effectively update and implement land use regulations that protect functioning marine and freshwater habitats</u>**.
    a. King and Jefferson counties and the cities of Seattle, Burien, Shoreline, Auburn, Kirkland, Federal Way, Lynnwood, Monroe, Sammamish, Sumas, Tukwila and Woodinville complete inventories for SMP updates and are on track to amend regulations to more protective guidelines by December 1, 2009. (Ecology)
    b. Pierce, Kitsap, Thurston, Mason counties and marine shoreline cities within these counties receive increased funding and assistance for updating their SMPs and are on track to amend their SMPs with more protective programs by December 1, 2009. (Ecology—additional funding requested)
    c. Local governments receive technical assistance and inventory data to update critical areas maps as new science becomes available for effective critical areas ordinance implementation. (PSAT, WDFW, Ecology, CTED, DNR)

d. Guidance on implementing wetland management is provided at 25 trainings and presentations, and 80% of participants in training sessions rate the training as useful. (Ecology – additional funding requested)

e. Two wetland banks of a total 400 acres are established with private parties and local governments and receive guidance on their appropriate use to ensure that this innovative method effectively mitigates unavoidable impacts from new development. (Ecology – additional funding requested)

f. Small cities receive a critical areas ordinance guidance document. (CTED)

g. Guidance and training programs are developed in alternatives to "hard" shoreline armoring for state, local, tribal and federal staff and the consulting and building communities. (PSAT – additional funding requested, WDFW-additional funding requested)

h. The Coastal Training Program provides 28 workshops to state and local government staff, and the consulting and building communities, on shoreline and wetland science, management and practices. (Ecology)

i. Web-based guidance is provided for shoreline planning and permitting and 2,000 non-Ecology visitors per month use the website. (Ecology)

j. Demonstration projects in "soft" shoreline alternatives are constructed and monitored for effectiveness. (PSAT – additional funding requested)

k. A study of financial incentives is conducted for local governments to install natural process features as part of waterfront re-development plans. (PSAT – additional funding requested)

3. **Integrate and implement local watershed, salmon recovery and other plans through regulatory and voluntary approaches**.

a. Local watershed groups receive resources and guidance to integrate watershed, salmon recovery and other plans to carry out actions effectively, and to evaluate and adapt actions as they manage watersheds. (PSAT, all agencies)

b. Whatcom County receives assistance to implement results of the Birch Bay stormwater and watershed protection project. (PSAT, EPA, Ecology, WDFW, CTED)

b. Local governments receive information and technical assistance on landscape analysis tools to integrate land use, natural resource, and other information to help meet local planning needs and 6 local governments use landscape analysis tools to update local land use plans or regulations. (Ecology, WDFW, WSDOT)

c. New instream flow or water management rules that protect freshwater salmon habitat are adopted in 2 watersheds. (Ecology)

d. Pilot projects in the Skagit River basin demonstrate incentive techniques to provide wildlife habitat, improve water quality and maintain or improve the economic vitality of participating farmers. (EPA, Skagit Systems Cooperative, The Nature Conservancy)

4. **Prevent the introduction or expansion of new aquatic nuisance species in Puget Sound through regulatory and volunteer approaches**.

a. At least 5 percent of all vessels that arrive at Puget Sound ports are inspected, targeting high-risk vessels and conducting random inspections and sampling ballast to make sure that ballast water is properly managed. (WDFW)

b. Ballast water samples furnished by WDFW for all vessels that arrive at Puget Sound ports are analyzed to evaluate the risks associated with these vessels for introducing non-native species to the Sound. (Sea Grant)

c. Volunteer organizations monitor about 70 sites in Puget Sound for the presence of the invasive non-native European green crab and report their findings. (WDFW)

d. A strategic plan is prepared that addresses invasive species issues, including agency coordination and preventing, detecting, and responding to invasive species. (IAC reports as staff to Invasive Species Council)

e. Training and educational materials are provided to recreational divers to identify and report the presence of invasive aquatic species. (WDFW, Sea Grant, PSAT)

f. 25 percent of Puget Sound's 145 marinas are monitored for the presence of non-native plants and animals. (WDFW)

5. **Identify and fill information needs to monitor and improve the effectiveness of protection strategies**.

a. The percent of development that occurs within Urban Growth Areas (UGAs) increases as compared to the percent that occurs outside of UGAs, based on evaluating information collected from Puget Sound counties required to report on buildable lands (King, Pierce, Snohomish, Kitsap, and Thurston). (CTED)

b. Local watershed groups receive information on regional changes in land cover and impervious surfaces to use to evaluate the effectiveness of protection strategies. (PSAT, EPA)

c. A Geographic Information System database or "Conservation Registry" is developed that documents locations of past, present and future conservation projects located in Puget Sound region. (WDFW)

d. Eelgrass status and trends are monitored annually throughout Puget Sound and focused studies are completed in two regions. (DNR)

e. The effects of stressors on eelgrass abundance and distribution are evaluated at two sites. (DNR)

f. The status and trends in floating kelp abundance and distribution are tracked. (DNR)

g. Biodiversity in intertidal biotic communities in central and southern Puget Sound are tracked. (DNR)

h. A review of Hydraulic Project Approval compliance and effectiveness is conducted, including evaluation of mitigation. (WDFW – additional funding requested)

6. **Develop a network of sustainable resources to support Soundwide public outreach and landowner education and stewardship**.

a. Shoreline landowner workshops are held in 10 counties to build stewardship behaviors that protect and restore habitats. (PSAT)

b. At least 800 local government staff, real estate professionals, developers and citizens increase their knowledge and behaviors to better protect functioning habitats. This will include awarding 10,000 clock hours to real estate professionals. (WSU Extension)

c. 400 Beach Watcher volunteers are trained and Shore Stewards increase membership in the north Sound by 1,000 members. (WSU Extension—may require additional funding, Sea Grant, NWSC)

d. 500 tideland owners will be able to identify and maintain the tideland plants growing in their tidelands and understand their ecological value. (Sea Grant)

e. Educational programs on estuary and wetlands serve 8,000 school children at the Padilla Bay National Estuarine Reserve. (Ecology)

f. Updated guidelines for Puget Sound-friendly nearshore development are disseminated to property owners. The guidelines use real-world examples that meet property owner desires for shoreline access while preserving habitat. (Ecology, PSAT, other agencies)

g. 150 Puget Sound 7th and 8th grade students attend an annual Science Camp to study fisheries, marine mammals, environmental assessment, oceanography, and weather at the NOAA facility at Sand Point. (NOAA)

Priority 6: Restore degraded marine and freshwater habitats

Long-term goal: Restore streams, nearshore, and estuarine habitats within Puget Sound to achieve a net gain in ecological function and area.

Extensive development and land conversion throughout the Puget Sound basin over the last hundred years has resulted in significant loss of fish and wildlife habitat, on the shorelines, near rivers and streams that empty into the Sound and in the uplands. Habitat has also been impaired through the introduction of non-native and invasive species, which can alter habitats and overwhelm native species, and by derelict fishing gear such as abandoned or lost nets and crab pots in marine waters.

This loss and alteration of key habitat and habitat-forming processes has led to a resulting pressure on many of the Sound's living resources, from salt marshes, eelgrass beds and forage fish. Loss of these habitats and species spreads through the food web to affect salmon, marine birds and orca whales. Protecting remaining functioning habitat and restored habitats along with work under this priority area is necessary to recovering the species in decline in Puget Sound (see pages 32 and 43).

Evidence of habitat degradation includes declining water quality, altered instream flows and water levels, invasions of non-native plants and animals, and lack of native vegetation, especially along streams and shorelines. Increased development in river floodplains and marine shorelines disrupts habitat-forming processes as individuals and communities attempt to manage new flooding, erosion and landslide hazards. The greatest habitat losses have occurred in areas of high population density and areas associated with major infrastructure such as roads, ports, dams, and leveed agricultural areas. A majority of the Sound's shoreline has been modified, with impacts to nearshore habitats and species that function as critical links in the food web.

State, federal, tribal and local partners working to restore freshwater and nearshore habitats focus efforts on recovering the underlying natural processes that move water, organic material, and sediment. State and federal agencies and restoration scientists making funding decisions look at how the projects will continue to function and support habitat-forming processes over time.

Partners in restoring degraded marine and freshwater habitats

State and federal agencies provide funding for habitat restoration through a variety of programs. The state Salmon Recovery Funding Board (SRFB) and Aquatic Lands Enhancement Account (ALEA) are administered by the Office of the Interagency Committee (IAC). Other funds are provided through the departments of Ecology, Natural Resources (DNR), Fish and Wildlife (WDFW), and the Conservation Commission (WSCC). Federal agencies with funding programs include the Environmental Protection

Agency (EPA), NOAA Fisheries and the U.S. Fish and Wildlife Service (USFWS). Citizen volunteers working in Regional Fisheries Enhancement Groups receive funding from WDFW to coordinate salmon restoration activities, and cooperative groups of local and tribal governments and citizens develop and submit ranked project proposals to the SRFB through lead entities established under the Salmon Recovery Act in 1998.

All of these agencies and Action Team staff partner with the U.S. Army Corps of Engineers (ACOE) and other federal agencies under the Puget Sound Nearshore Partnership (PSNP) which explores the feasibility of large-scale nearshore ecosystem restoration. Through PSNP they benefit from improved science, strategic planning and early action implementation. In addition to the regional PSNP efforts, the Action Team agencies also support smaller-scale restoration work done by many local groups.

The Northwest Straits Commission (NWSC) developed protocols and initiated a project to remove abandoned gear from Puget Sound waters that causes significant harm to habitats and marine life. NOAA, DNR, WDFW and other partners assist the NWSC in removing tons of derelict gear from marine waters and are expanding this successful program to other parts of the Sound.

The Department of Agriculture (WSDA) receives state funding to control and eradicate spartina infestations in Puget Sound. WDFW and local groups receive some funds from WSDA for this purpose. WDFW is also the lead agency for implementing the Early Detection and Rapid Response Plan for aquatic invasive species (see section to protect habitat pages 32 to 38 for work to prevent invasive species).

Proposed 2007-2009 strategies for restoring degraded habitats

1. **Restore degraded habitats by restoring habitat-forming processes.**
2. **Plan and undertake large-scale nearshore restoration initiatives through Puget Sound Nearshore Partnership.**
3. **Improve restoration projects by applying the best scientific principles and a process-based approach.**
4. **Improve and streamline permitting for restoration projects.**
5. **Control and stop aquatic nuisance species from spreading and rapidly and effectively respond when any new species are detected.**

Proposed results for restoring degraded habitats

1. **Restore degraded habitats by restoring habitat-forming processes**.
   (The IAC will report on habitat gains for results a, b, and c based on funding and joint efforts of multiple federal, state, tribal and local governments and many organizations).

a. Projects to restore natural ecological functions increase the area of tidally and seasonally influenced estuarine wetlands by 700 acres. (IAC)

b. Projects restore riparian habitat and improve conditions and processes on 500 acres of Puget Sound shorelines, estuaries, rivers and streams. (IAC)

c. Efforts to restore and protect the natural delivery of sediment and organic matter improve the natural functions of 4 Puget Sound drift cells. (IAC)

d. Riparian habitat protected by the Conservation Reserve Enhancement Program increases by 400 new acres and 20 new stream miles. (WSCC)

e. Habitat is improved at 3-6 state parks to serve as demonstrations of Sound-friendly development. (State Parks – additional funding requested)

f. Derelict fishing nets and derelict crab and/or shrimp pots are removed from Puget Sound to uncover marine habitats and prevent further harm to marine life. (Northwest Straits Commission, NOAA, DNR, WDFW- additional funding requested)

g. 26 derelict vessels are removed from the marine environment. (DNR – additional funding requested)

h. A Puget Sound Chapter of the Corporate Wetlands Restoration Program is established to help fund local habitat protection and restoration projects. (EPA through Battelle Northwest)

2. **Plan and undertake large-scale restoration initiatives through the Puget Sound Nearshore Project (PSNP).**

WDFW is the state lead agency, the Army Corps of Engineers is the federal lead agency, partners include multiple state, federal, tribal and local governments and entities. (WDFW requests additional funding for Deschutes estuary feasibility study and restoration projects to be identified and added to results).

a. Complete feasibility studies for Phase II of the PSNP study, and the Deschutes Estuary Restoration and Burlington Northern Santa Fe projects.

b. Implement the Nisqually Estuary Restoration Project, the final phase of the Quloolt Estuary Restoration project, the Skokomish Estuary Restoration Project, and the Wiley Slough Skagit Estuary Restoration project.

c. Complete _____ estuary and salmon restoration projects funded in the 2006 supplemental budget. (projects as identified for WDFW, State Parks) ADD PROJECT NUMBERS/NAMES WHEN SELECTION COMPLETE IN OCTOBER 06

3. **Improve restoration projects by applying the best scientific principles and a process-based approach**.

a. Criteria for project design and funding prioritizes are developed that incorporate Guiding Restoration Principles developed by the PSNP. (IAC, WDFW)

b. Recommendations of the *Puget Sound Salmon Recovery Plan* regional nearshore chapter are carried out in restoration projects. (IAC, WDFW)

c. Restoration strategies in updated Shoreline Master Programs address marine shoreline restoration, with a range of action measures and implementation priorities based on best available information on habitat processes and function. Cities and counties have access to information sources and strategy examples. (Ecology)

d. Implementation of priority actions in Shoreline Master Program restoration strategies is supported with technical and financial assistance. (Ecology, WDFW, IAC)

e. Conservation districts improve habitat implementing the science-based practices in the Natural Resources Conservation Service Field Office Technical Guide. (WSCC)

4. **Improve and streamline permitting for restoration projects**.

a. A streamlined process for Endangered Species Act consultation on restoration projects is developed by federal agencies. (ACOE, NOAA Fisheries, USFWS, and EPA)

5. **Control and stop aquatic nuisance species from spreading, and rapidly and effectively respond when any new species are detected**.

a. Reduce the area of Puget Sound infested by spartina by 100 acres, or approximately 20 percent per year consistent with WSDA's 2006 Spartina Management Plan for north Puget Sound. (WSDA)

b. Control and eliminate established populations of the club tunicate, *Styela clava* at locations in Puget Sound. (WDFW, PSAT, DNR)

c. Develop and implement a response strategy for non-native *Styela clava* (club tunicate) and *Ciona savignyi* (transparent tunicate) in Puget Sound and Hood Canal. (WDFW, PSAT, Ecology, DNR)

d. Develop and implement a strategy to raise public awareness of invasive species as a significant environmental threat to Puget Sound.(ANS Committee: WDFW, PSAT, Ecology, DNR, WSDA, State Parks, IAC)

Priority 7: Protect species diversity

NOTE: In May 2006, the Action Team discussed changing this priority title to reflect a broader approach to protecting Puget Sound biodiversity rather than the existing species-by-species approach for species at risk. At the October 10 Action Team/Council meeting staff will ask for direction on the following recommendation:

1- ***Change the priority title to the wording shown***
2- ***Include a long-term goal to manage Puget Sound to protect its biodiversity, as opposed to the current species-by-species approach.***
3- ***Over the 2007-2009 biennium, work with agencies to develop a strategic approach to achieve that long-term goal and revise the priority to reflect that approach, while continuing to implement legally-required species-based recovery plans. We will also work with the Biodiversity Council to ensure that our work is consistent with their comprehensive 30 year strategy due in December of 2007.***

Long-term goal: Manage Puget Sound to protect the full range of its biological diversity

Pollution, loss of habitat, over-harvest or competition with non-native species can reduce the population of a native species until it is at risk of extinction. Any native species whose abundance is steadily declining is at risk. Conserving and recovering Puget Sound species at risk requires significant progress on all of the priorities of this plan.

The region's biodiversity is threatened by declines in the abundance of some aquatic species to levels that signal ecosystem imbalance. This imbalance, if not corrected, could lead to significant degradation of the ecosystem. Federal and state laws require special protection efforts and recovery plans for species at risk of extinction. All of the efforts underway in other priorities of this plan to clean up and prevent pollution from entering the food web and to protect and restore habitat will benefit the species at risk, but additional actions identified in recovery and management plans will accelerate that recovery. This priority addresses at-risk species of orca, salmon, forage fish, marine fish, marine birds and native shellfish.

Orca

In 2005 the NOAA Fisheries Service designated Southern Resident orca—or killer whales—as endangered under the federal Endangered Species Act (ESA). The State Fish and Wildlife Commission in 2004 added all orcas to the state list of endangered species. Canada has listed both the northern and southern resident whales under their Species At Risk Act. In a draft *Orca Conservation Plan for Southern Resident Killer Whales* issued in 2005, NOAA Fisheries listed toxic contamination, availability of food, and disturbance by noise and other activities as key factors in orca survival. Transient orcas prey on seals and other marine mammals and are part of a widespread population. The Northern Resident orcas are fish-eaters and spend much of their time in British Columbia but occasionally enter Washington waters.

A key prey for the Southern Resident orcas is salmon, especially Chinook salmon. These orcas spend summers in the transboundary waters of the San Juan Islands and may travel throughout the Sound other parts of the year. Some also travel south to California and north along the west coast of British Columbia during the winter. The survival of resident orca seems to be linked to salmon survival, and thus to freshwater and nearshore habitat conditions as well as open ocean habitat and fishing and hatchery decisions. Forage fish that rely on nearshore habitat are a food supply for both orca and salmon and many other marine fish, marine birds, and other marine mammals. Toxic contamination of orcas may occur if the orca eat bottomfish from toxic hot spots, or other fish that have accumulated toxic chemicals in their tissues as the chemicals spread through the food web. Human disturbances may occur from vessel activity and other underwater noise sources. An oil spill would have disastrous effects on the orca.

In addition to the NOAA Fisheries proposed *Orca Conservation Plan for Southern Resident Killer Whales*, Canada's Department of Fisheries and Oceans (DFO) has completed a recovery strategy for the Northern and Southern Residents. NOAA Fisheries also protects orcas under the Marine Mammal Protection Act. A committee that includes NOAA Fisheries, the Department of Ecology (Ecology), the Environmental Protection Agency, DFO and the British Columbia Ministry of Water, Land and Air Protection shares information and coordinates among the various recovery efforts. Puget Sound also has an active community of interested citizens with representatives in these processes.

Salmon

In 1999, NOAA Fisheries listed Puget Sound Chinook and Hood Canal Summer Chum salmon as threatened under the federal ESA. The U.S. Fish and Wildlife Service also listed as threatened Puget Sound stocks of bull trout. The causes of salmon declines have been broadly characterized as habitat destruction, harvest management, hatchery management, and hydropower projects. In March 2006, NOAA Fisheries proposed listing Puget Sound steelhead as threatened under the federal ESA with a final decision due in late 2006.

In addition to funding salmon habitat restoration programs (see page 39) the state helped fund the Puget Sound Shared Strategy's efforts to coordinate a Sound-wide collaborative effort to develop the *Draft Puget Sound Salmon Recovery Plan* for Puget Sound Chinook salmon. Submitted to NOAA Fisheries in June 2005, the plan is currently undergoing review. Action Team agencies have contributed a variety of results in this plan that help to implement the draft salmon recovery plan, and with the Governor's Salmon Recovery Office will track and report on them.

NOAA is working with state and tribal co-managers to integrate harvest and hatchery operations into the plan. At the same time, state, local, tribal and private parties are beginning to implement actions in the plan. The Shared Strategy has created the Puget Sound Salmon Recovery Council with representatives of each of the 14 watershed areas that wrote local chapters for the plan. Early actions in nearshore and estuarine waters

have been undertaken through the Estuarine and Salmon Recovery funding established by the Washington State Legislature in 2006.

In addition, the Hood Canal Coordinating Council drafted a *Hood Canal Summer Chum Recovery Plan* with funding from the state Salmon Recovery Funding Board. It was submitted to NOAA Fisheries in October 2005 and is under review for adoption.

Forage Fish

Several important species of forage fish such as surf smelt, sandlance, and Pacific herring that live and spawn on the shoreline or in the shallow nearshore marine waters of Puget Sound are the focus of management plans to address historical declines. Forage fish and their eggs are critical prey for a large variety of marine life including fish, birds, and marine mammals. Migrating and resident salmon rely on Puget Sound forage fish as the salmon travel to and from the Pacific Ocean.

Inventories by Washington Department of Fish and Wildlife (WDFW) and others suggest that extensive shoreline development has significantly reduced the spawning habitats of surf smelt and sand lance, which occur high up on beaches and are susceptible to scouring from hard shoreline modifications such as seawalls and water pollution from runoff. Dredging, pollution and shading of nearshore waters can remove or diminish eelgrass beds that herring use as spawning habitat. Pacific herring stocks declined sharply in the north Sound (Cherry Point) and Discovery Bay in the early 1990s although there were slight increases in the central and south Sound stocks during the same timeframe. Although NOAA Fisheries reviewed the severe decline of the Cherry Point herring stock for listing under the ESA, in 2005 it determined that the stock does not qualify for protection because it does not meet the standards for a “species” under the ESA. Both of these stocks have demonstrated some limited recovery during the ensuing period.

WDFW has a forage fish management plan and is transferring years of inventory data to digital maps to make available to local governments and restoration groups. A number of recent local government critical areas ordinance updates added forage fish protection measures. Marine resource committees, salmon restoration groups, tribes and others are undertaking inventory and mapping projects to better understand and protect these species. Shoreline landowner education conducted by Action Team staff, Ecology, Washington Sea Grant, Washington State University Extension, other agencies and local partners helps to increase awareness and improve protections along targeted shorelines.

While certain forage fish stocks are in decline, anchovies have been documented in recent years in south Puget Sound and are the subject of a work group of state, tribal, federal and other scientists to understand whether this signals a change in the ecosystem, and how significant this species is to the food web in Puget Sound.

Groundfish

Puget Sound groundfish include over 150 species, including sharks, rockfishes, codfishes, flatfishes and lingcod, among others. They make up a high percent of the biomass of the ecosystem. Several key species including rockfishes, dogfish, Pacific cod, Pacific hake, and walleye Pollock have undergone dramatic declines during the past twenty years. Eighteen species were reviewed for listing under the federal ESA by NOAA Fisheries. Although the petition was denied in 2000, the federal agency concluded that Pacific hake are a candidate species and other species are vulnerable. They recommended that the state impose stronger conservation measures and target meaningful recovery efforts.

WDFW manages groundfish under the terms of the Puget Sound Groundfish Management Plan and has limited fisheries and, under the approval of the state Fish and Wildlife Commission, has also been establishing a series of Marine Protected Areas/Conservation Areas as part of a rockfish recovery effort in Puget Sound. The long-term strategy is to provide a series of such sites in geographically separate areas coupled with other management tools to help recover Puget Sound rockfish populations.

WDFW is completing a review of status and trends of several species of rockfish and developing a rockfish management and conservation plan and will be submitting it to tribal co-managers for their consideration. Rockfish are slow-growing, long-lived and many are not migratory, so they are susceptible to fishing pressure. WDFW conducts surveys and studies of rockfishes and other groundfish species and will be implementing new conservation measures for rockfishes. Marine Resource Committees and the Northwest Straits Commission (NWSC) have worked to draw attention to the problem in local communities, including establishing voluntary bottomfish protection areas and a Marine Stewardship Area in San Juan County**.**

Marine Birds

More than 100 species of marine birds, including seabirds, seaducks and shorebirds[2], are full or part-year residents of Puget Sound. Like salmon and orca, many marine birds are at or near the top of the food web and are thus important indicators of overall ecosystem health. Unfortunately, like salmon and orca, significant declines have occurred in the region's marine bird populations. Fourteen of 18 marine bird species studied between 1978-1979 and again in 1992-1999 have experienced a 56 to 95 percent decline. The total number of marine birds in the region dropped approximately 27 percent during this same time period. A variety of human and natural sources are blamed for these declines, though scientists do not fully understand all of the sources or their relative contributions.

[2] **Seabirds** are birds (except waterfowl) that frequent coastal waters and the open ocean, such as gulls, murres, pelicans, cormorants and albatrosses. **Seaducks** are diving ducks that frequent the sea, such as scoters, harlequins, long-tailed ducks, and mergansers. **Shorebirds** are any bird that frequents the seashore such as western sandpipers and black oystercatchers. The term **marine birds** is used in this document to capture all three categories.

In addition to changes in the food web and loss of habitat, some human-related causes of declines are derelict gear and plastic debris in the marine environment.

Few of the at-risk species of marine birds are currently protected under state or federal law. Only three species—brown pelicans, marbled murrelets and common loons—are listed as threatened species in Washington State. The brown pelican and marbled murrelet are also listed as threatened under the federal ESA. Six others are state "candidate" species, including western grebe, common murre, Brandt's cormorant, Cassin's auklet, tufted puffin and short-tailed albatross. The pigeon guillemot, whose numbers have declined by 55 percent since 1979, is not listed as a candidate under state or federal endangered species acts. Surf scoters, whose numbers are down 70 percent for the same time period, are ineligible for listing in the state due to their status as a game bird. WDFW and federal agencies responsible for managing marine birds in Puget Sound acknowledge that they need to improve coordination and add resources, particularly in prioritizing and carrying out research activities, identifying science, management and education gaps, conducting status reviews for at-risk species, and implementing conservation measures. A gathering of marine bird scientists and managers in September, 2005 identified 62 specific science, education and management gaps related to marine birds in Puget Sound. Many more gaps have subsequently been identified, such as the need to conduct a status review for the red-throated loon.

WDFW biologists are conducting ongoing monitoring and focused studies of selected marine bird populations and are gathering data needed for reports on the status of candidate species. Audubon Washington is working with local chapter volunteers to develop site conservation strategies for Port Susan Bay, which is one of several key habitats for many species of marine birds. WDFW and Action Team staffs are providing technical and conservation planning assistance to this effort. Marine birds rely for survival on a complex balance between habitats and available food for survival, and those with serious declines are less able to adapt to changes in timing, prey or habitat conditions.

Native shellfish

The Olympia oyster (*Ostreola conchapila)* is the only oyster species native to the Pacific northwest. Although not threatened in its native range, the Olympia oyster is staging a comeback in many areas of Puget Sound. These oysters historically existed in abundance in south Puget Sound and Willapa Bay, but their numbers have been reduced by pollution, over-harvesting, habitat loss, and conversion of native oyster grounds to other economically valuable species. The Puget Sound Restoration Fund, a non-profit organization, works closely with the public and private sectors, local and tribal governments, and private tideland owners to reestablish the Olympia oyster.

WDFW has guidelines for restoring Olympia oysters in Washington State that are designed to preserve the genetic integrity of remaining populations by seeding new locations with brood oysters from the same management area. WDFW developed a plan

for rebuilding stocks of Olympia oysters, but implementation actions have not been funded. Reestablishing this species also requires protection of water quality to sanitation standards that allow for shellfish harvest and human consumption.

The Northern abalone (*Haliotis kamtschatkana*) a native shellfish, has experienced significant declines and was closed to harvest in 1994. Although several groups are working on abalone recovery, no comprehensive abalone recovery plan has been written. Research related to abalone is underway through the Puget Sound Restoration Fund, Pacific Shellfish Institute, the University of Washington and WDFW.

Proposed 2007-2009 strategies for protecting species diversity

1. **Achieve significant progress on priorities 1 through 6 of this document for overall ecosystem and food web protection and recovery to support recovery of the at-risk species.**
2. **Implement the *Puget Sound Salmon Recovery Plan,* the *Hood Canal Summer Chum Recovery Plan,* the *Recovery Plan for the Coastal-Puget Sound Bull Trout* and the *Proposed Conservation Plan for Southern Resident Killer Whales (Orcinus orca).* Use monitoring, coordination and adaptive management to evaluate and modify the implementation.**
3. **In anticipation of completion of a rockfish conservation plan, support regulatory and voluntary tools for rockfish recovery.**
4. **Launch a multi-agency effort to assess the relative abundance and geographic distribution of major forage fish species in Puget Sound as the basis for management and recovery strategies.**
5. **Identify research needs and develop management strategies for marine bird populations considered at risk.**
6. **Increase efforts to reestablish and protect Puget Sound Olympia oyster populations.**

Proposed results for conserving and recovering species at risk

Orca

a. Strategies and priority actions of the orca conservation plan are implemented. (WDFW, other agencies)

b. Implementation of the NOAA Fisheries Service orca conservation plan is coordinated with the conservation plan of Canada's DFO. (NOAA, PSAT)

Salmon

a. Hatchery and natural chinook integration plans will be developed for chinook salmon populations included within the NOAA Fisheries Hatchery Listing Policy, consistent with the Hatchery Reform Project of Puget Sound. (WDFW, Tribal Governments)

b. Additional chinook salmon recovery exploitation rates, to include the Puyallup, Nooksack and Nisqually rivers will be developed consistent with the adaptive management strategy in the Puget Sound Chinook Harvest Management Plan. Recovery exploitation rates defined in the current plan will be refined as new stock and fishery data are collected reflecting improved estimates of actual exploitation rates, escapement, and survival (WDFW, Tribal Governments)

c. State agency actions in the *Draft Puget Sound Salmon Recovery Plan* and draft *Hood Canal Summer Chum Recovery Plan* begin implementation. (All agencies)

d. Indicators for salmon recovery plan implementation are tracked and reported. (Governor's Salmon Recovery Office)

Marine fish

a. WDFW's Forage Fish Management Plan is implemented.

b. A comprehensive forage fish assessment, monitoring and research plan tailored to important species in Puget Sound and compatible with the Fish and Wildlife Commission's Forage Fish Management plan is designed and begins implementation. (WDFW – additional funding requested, USGS, NWSC, NOAA Fisheries, NWIFC and interested tribal governments, Sea Doc Society)

c. Direct and indirect harvest impacts on rockfish are minimized. (WDFW)

d. Develop two new groundfish conservation plans for key species detailing the status, fishery and needs to recover or maintain healthy populations. (WDFW)

Marine birds

a. Complete final status reports for "candidate" species to determine whether a listing is warranted. Species include western grebe, common murre, Brandt's cormorant, Cassin's auklet, tufted puffin and short-tailed albatross. (WDFW)

b. Complete and implement a recovery plan for marbled murrelet. (WDFW)

c. Develop a conservation plan for at-risk marine bird species in Puget Sound. (PSAT and WDFW)

d. Protections for at-risk species are incorporated into Shoreline Master Program updates in 10 jurisdictions. (PSAT, Ecology)

e. Local conservation groups and the public receive education on issues related to at risk marine birds. (PSAT, WDFW)

f. Surveys of residential and wintering marine bird species in decline are expanded, and monitoring activities investigate sources of marine bird declines. (WDFW)

g. Marine birds are provided the best achievable protection from the risk oil spills. (Ecology)

Native shellfish

a. Funding and other resources are identified to implement the plan to rebuild Olympia oyster stocks. (WDFW, NOAA)

b. State agencies support the efforts of the Puget Sound Restoration Fund and other partners to reestablish Olympia oyster populations in Puget Sound. (WDFW, PSAT, NOAA)

c. The West Coast Native Oyster Restoration Workshop is held in Washington State in 2007/2008. (NOAA)

Priority 8: Prepare for and adapt Puget Sound efforts to a changing climate

Scientists monitoring global changes in climate agree that rapid accumulation of greenhouse gases in the atmosphere is heating the planet and that this climate change will continue far into the future. Past, current and future human emissions of greenhouse gases are contributing to this effect. The vast majority of scientists worldwide who study this problem agree on these facts. There is uncertainty, however, in predicting how much the planet will warm, at what rate, and what the impacts will be in particular regions.

The Puget Sound Action Team released a report in 2005 developed by the Climate Impacts Group at the University of Washington that documented the changes in Pacific Northwest climate and hydrologic patterns to date, and identified Puget Sound ecosystem conditions and resources likely to experience impacts under future changes as predicted by climate models. The scientists predict that the region is likely to experience average warming of several degrees by mid-century, with modest increases in winter precipitation, but greater runoff in streams because more precipitation will fall as rain rather than snow. The snowpack that feeds and cools many rivers in the basin in spring and early summer will decrease, and the region will experience higher winter flows, including more flooding, and lower flows during spring and summer. Global relative sea level rise will accelerate in Puget Sound, especially in the south Sound where the land is sinking compared to the crustal uplift in the north and northwest parts of the basin.

Impacts on the Puget Sound ecosystem from these changes will include greater stress for salmon and other freshwater aquatic species, changes to Puget Sound circulation, salinity and stratification patterns, and potentially, warmer water temperatures. Fragile marine aquatic species whose life-cycles depend on narrow ranges of conditions will be most severely affected. Nearshore salt marshes and other estuarine habitats that many species depend upon at critical life stages would be at risk of erosion, flooding and other changes. Increased bluff erosion and human efforts to hold back this process could further imbalance the Sound's nearshore habitats.

Efforts to protect and restore Puget Sound's biological diversity and water quality cannot succeed if they are designed and carried out independently of anticipated regional changes in climate. It is a priority to increase our understanding of the nature and rate of these changes and take actions to increase the adaptability of regional ecosystems to them. Decision-makers and resource managers will benefit from monitoring information and models for managing risks to vulnerable ecosystem processes. The Action Team partnership will begin to consider climate change impacts as it addresses other Puget Sound priorities and will incorporate an approach that increases the region's flexibility and adaptability to changing ecosystem conditions.

Proposed 2007-2009 strategies to prepare and adapt efforts to a changing climate

1. **Support, track and report on science related to the effects of climate change on the Puget Sound ecosystem.**
2. **Provide risk-assessment models to help identify vulnerabilities to existing infrastructure and work with affected agencies to prepare for or respond to potential impacts.**
3. **Review state, federal and local activities and expenditures on conservation and recovery in the Puget Sound basin in light of climate change impacts, and make specific recommendations for changes, if necessary.**
4. **Make specific recommendations on management and planning adaptations in response to climate change for all levels of government in Puget Sound.**

Proposed results to prepare and adapt efforts to a changing climate

1. **Support, track and report on science related to the effects of climate change on the Puget Sound ecosystem**.

   a. Semiannual reports are provided on the most recent scientific studies relating to climate change and its impact on marine systems. (PSAT – additional funding requested)
   b. A workshop is held for regional scientists and resource managers to exchange research findings on the implications of climate change to the Puget Sound region. (PSAT- additional funding requested)

2. **Provide risk-assessment models to help identify vulnerabilities to existing infrastructure and work with affected agencies to prepare for or respond to impacts**.

   a. A risk-assessment model applicable to Puget Sound is provided to state, local and tribal government agencies. (PSAT – additional funding requested)
   b. Key individuals in federal, state, local and tribal agencies identify how a risk-assessment model meets their needs and 20 percent apply the model to drafting risk-assessment plans for their areas of responsibility. (PSAT)
   c. A Geographic Information System (GIS) analysis of Puget Sound is conducted to identify existing infrastructure that is potentially at risk from the likely impacts of climate change. (Ecology)

3. **Review state, federal and local activities and expenditures on conservation and recovery in the Puget Sound basin in light of climate change impacts, and make recommendations for changes, if necessary**.

   a. A "case statement" is produced to address the most recent research relating to implications to conservation and recovery activities, with recommendations for changes to these activities. (PSAT – additional funding requested)

b. Regional leaders working on conservation and recovery projects incorporate the recommendations on possible climate change impacts into conservation and recovery plans. (PSAT – additional funding requested)

4. **Make recommendations on management and planning adaptations in response to climate change for all levels of government in Puget Sound**.

a. A strategy for state agencies is developed to examine how resource management policies would perform in the future if various elements of climate were altered. (PSAT – additional funding requested)
b. A system to monitor and report on regional climate and ecosystems for ongoing changes is developed with an adaptive management loop to incorporate monitoring findings into management and planning decisions. (PSAT)

The Role of Science in Puget Sound efforts

Long-term goal: Environmental policy and management in Puget Sound is informed by ongoing and comprehensive science.

Science is the foundation for the work of Puget Sound Action Team agencies to conserve and recover Puget Sound. Scientists from a number of federal, state, local and trial governments, universities, colleges, environmental organizations, and industry groups collaborate and share information on the Puget Sound ecosystem. The scope of their work includes examining how the ecosystem functions and the influence of humans on the ecosystem. Long-term monitoring helps to detect changes and measure the effectiveness of our management activities, while other studies focus on cause-and-effect relationships to help shape management solutions.

The Puget Sound Assessment and Monitoring Program (PSAMP) is an ongoing collaborative science effort that seeks to assesses the health of Puget Sound and our management strategies and fills science gaps to help develop management actions. Partners in PSAMP scientific investigation include King County, The Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration (NOAA), the University of Washington Applied Physics Laboratory, and the Washington Departments of Fish and Wildlife (WDFW), Health, Natural Resources and Ecology. PSAMP scientists use funding designated in this biennial plan to provide status and trends information on habitat, species and water quality. These include:

- Marine water quality (dissolved oxygen, nutrients, cholorphyll, pathogens)
- Fresh water quality (nitrogen, phosphorus, dissolved oxygen, pathogens)
- Sediment quality (contaminants, infauna diversity)
- Eelgrass and floating kelp distribution and abundance
- Contaminants in fish (polychlorinated biphenyls – PBTs, polyaromatic hydrocarbons – PAHs, polybrominated diphenyl ethers – PBDEs, metals)
- Wintering marine bird and water fowl populations
- Groundfish abundance
- Pathogens in shellfish growing areas
- Intertidal invertebrate abundance

Results are compiled by the Puget Sound Action Team staff every two years and published in the *Puget Sound Update* for a more scientific audience (the 2006 version is in press) and, for the general public, the *State of the Sound* (to be published in January 2007 along with a report of actions taken to address problems).

Proposed 2007-2009 strategies for the role of science

1. **Continue ongoing monitoring of the status and trends of key components of the Puget Sound ecosystem.**

2. **Provide scientific information to stakeholders, decision-makers and the public.**
3. **Direct new monitoring activities to focus on the effectiveness of management activities and policy initiatives.**
4. **Develop a roadmap to prioritize, finance and conduct focused research on emerging topics or research questions that are brought forth through PSAMP and science programs.**

Proposed results for the role of science

1. **Continue ongoing monitoring and initiate new monitoring of the status and trends of key components of the Puget Sound ecosystem**.
   a. Information from monitoring the ongoing status and trends is used to determine if conditions are improving or declining for forage fish, ground fish, marine birds, eelgrass, sediments and water quality and other components of the Puget Sound ecosystem. (PSAMP)
   b. Data from status and trends monitoring is used to watch for 'red flags' (e.g. species declines, deteriorating water quality and habitat degradation) and, with federal state and local agencies to launch diagnostic studies on red flag issues in a timely manner. (PSAMP)
   c. Threats to human health from marine environmental conditions such as harmful algal blooms, domoic acid, paralytic shellfish poisoning and other water contaminants are identified and measured. (Health)
   d. Threats to human and marine wildlife health from exposure to major contaminants (polychlorinated biphenyls or PCBs, polybrominated diphenyl ethers or PBDEs, mercury, polyaromatic hydrocarbons or PAHs, metals and pesticides) and new emerging contaminants (pharmaceuticals and personal care products, others) are identified and measured in key indicators in the food web including mussels, herring, salmon, and seals. (WDFW)

2. **Provide scientific information to stakeholders, decision-makers and the public**.
   a. Research and monitoring results are disseminated to managers via technical publications, PSAT newsletters, meetings and workshops, a spring 2008 Forum on Toxics in Puget Sound, and the 2009 Puget Sound Georgia Basin research conference. (PSAT)
   b. A conceptual model of Puget Sound is developed using data from PSAMP, the Puget Sound Nearshore Partnership and other science programs to communicate and organize scientific information, relationships and results across the priorities. (PSAMP)

3. **Direct new monitoring activities to focus on the effectiveness of management activities and policy initiatives**.

   a. The contributions of key toxic contaminants from terrestrial, atmospheric and marine discharge sources are determined. This information is used to determine toxic loading in sediments and key fish, mammal and water bodies in Puget Sound. (PSAMP)

   b. A characterization of the status and trends of toxic contamination and their effects in the Puget Sound ecosystem is coordinated, with newly identified contaminants of concern included in the characterization. (PSAMP and PSAT – additional funding requested, EPA, U.S. Fish and Wildlife Service, WDFW, Health)

   c. A conceptual model of Puget Sound (see 2.b above) is used to predict changes in conditions of ecosystem components with application of specific management activities and to help drive management decisions. (PSAMP)

4. **Develop a roadmap to prioritize, finance and conduct focused research on emerging topics or research questions that are brought forth through PSAMP and science programs**.

   a. A detailed work plan is developed for science activities in Puget Sound that describes the status and trends, effectiveness monitoring and research tasks that will be carried out by state agencies, and the funding level and need for each activity. (PSAT)

   b. A mass balance model of nutrient sources, reservoirs and pathways and risk to ecosystem components is developed. (PSAMP and others)

Coordinating Puget Sound conservation and recovery

Long-term goal: Lead coordination of the protection and restoration of Puget Sound.

In response to the challenges facing Puget Sound, in 1996 the Washington State Legislature created the Puget Sound Action Team (Action Team) as the successor to the Puget Sound Water Quality Authority. The Action Team's mission is to protect and restore Puget Sound and its spectacular diversity of life, now and for future generations. The Action Team works as an interagency, intergovernmental partnership to protect and restore the water quality, habitat and biological resources of Puget Sound and to recover species at risk.

The Action Team structure is made up of three interrelated entities:

- The Puget Sound Action Team is a 17-member governing body that includes directors from 10 state agencies, representatives from three federal agencies, one representative of tribal governments, two representatives of local governments (city and county), and a chairperson appointed by the Governor.
- The Puget Sound Council (Council) provides guidance to the Action Team and reviews its progress. It is made up of seven representatives of leading Puget Sound interests, including tribal governments, counties, cities, agriculture, the environmental community, the shellfish industry, and the business community, four representatives of the Washington State Legislature, and the chairperson of the Action Team.
- The Action Team staff provides professional and technical services to help the partner agencies and others in their efforts to protect, restore and sustain the Sound.

Proposed 2007-2009 strategies for coordinating Puget Sound protection and conservation

1. **Define, coordinate, and implement the state's environmental agenda for Puget Sound.**
2. **Ensure accountability for results in the plan.**
3. **Develop specific strategies and courses of action for Puget Sound's existing and emerging conservation needs, evaluate the effectiveness of those strategies and actions, and build upon success.**
4. **Engage and involve Puget Sound governments, organizations, and citizens in efforts to protect and restore Puget Sound.**
5. **Assist in carrying out the recommendations of the Puget Sound Partnership on a 2020 Agenda, engaging and educating the public, enhancing funding, improving governance, and integrating Puget Sound science.**

Proposed 2007-2009 results for coordinating Puget Sound protection and conservation

1. **Define, coordinate and implement the state's environmental agenda for Puget Sound**.
   a. Measurable progress is achieved and documented on all priorities in the 2007-2009 Puget Sound Conservation and Recovery Plan. (PSAT, all agencies)
   b. A new Puget Sound Conservation and Recovery Plan and budget for the 2009-2011 biennium is prepared, approved, and submitted to the governor and the legislature. (PSAT, all agencies)
   c. Action Team staff ensure that new threats or challenges that emerge during the biennium are considered and addressed as appropriate. (PSAT, all agencies)
   d. The Puget Sound Water Quality Management Plan is updated to reflect the Puget Sound Partnership's 2020 agenda and to incorporate salmon recovery plans, water quantity plans and to show connections with other regional plans. (PSAT, all agencies)

2. **Ensure accountability for results in the plan.**
   a. The Action Team uses the Government Management, Accountability and Performance system to track, manage, improve and periodically report on progress in achieving desired results. (PSAT, all agencies)
   b. A report detailing progress is submitted to the governor, the legislature and the public by December 2008. (PSAT, all agencies)

3. **Develop specific strategies and courses of action for Puget Sound's existing and emerging conservation needs, evaluate the effectiveness of those strategies and actions, and build upon success**.
   a. The Puget Sound Council assesses the work of the Action Team partnership and convenes appropriate parties to make improvements where needed, resolve conflicts and impasses, and develop new areas and ways of engagement. (PSAT)
   b. Interagency teams coordinated by Action Team staff develop and implement strategies to address priority issues and evaluate the effectiveness of those strategies. (PSAT)
   c. Action Team staff maintain a web-accessible Geographic Information System database for Puget Sound with information to support and show progress in priority areas. (PSAT)
   d. Action Team staff monitor current and emerging conservation and environmental issues in Puget Sound, track and participate in developing policies and practical solutions, and find and promote alternatives to activities

and projects that may harm Puget Sound's marine and freshwater environment. (PSAT)

3. **Engage and involve Puget Sound governments, organizations, and citizens in efforts to protect and restore Puget Sound**.
   a. The Puget Sound community is provided with accurate, relevant and accessible information on the status of the Puget Sound ecosystem, issues related to the health of the ecosystem, and activities of the Puget Sound Action Team. (PSAT, all agencies)
   b. Action Team staff help to implement a new Sound-wide campaign to dramatically increase public awareness about the problems facing Puget Sound. (PSAT – additional funding requested, all agencies)
   c. Outreach, technical assistance and funding for Public Involvement and Education (PIE) program projects are provided to governments, community groups, businesses, organizations and individual. PIE projects reach 400,000 citizens with education directed at behavior change and to raise awareness around priorities. (PSAT)
   d. The Puget Sound Council actively communicates with key constituencies to improve collaboration, partnerships, and communication. (PSAT)
   e. Resources are provided to support Puget Sound education in schools in partnership with the Office of the Superintendent of Public Instruction. (PSAT)

4. **Assist in carrying out recommendations of the Puget Sound Partnership**
   a. A revised Puget Sound Management Plan reflecting the Partnership's 2020 agenda is completed. (PSAT, all agencies, broader community)
   b. A Soundwide public information campaign to support long-term efforts to clean up Puget Sound begins in partnership with non-profit organizations and local and tribal partners. (PSAT – additional funding requested, all agencies and private and non-profit partners)
   c. A Puget Sound communications, outreach and education network is established in partnership with public and private entities. (PSAT- additional funding requested, all agencies)

Glossary of Planning Terms

2007-2009 Puget Sound Conservation and Recovery Plan: A biennial plan of work for the Puget Sound Action Team mandated by Chapter 90.71.050 Revised Code of Washington. The proposed plan is submitted to the governor and the legislature and includes budget information and activities submitted by state agencies and university programs to be considered by the governor and the legislature in the budget for July 2005 to July 2007. The plan also includes some federal activities from Action Team partners and key non-state partners where appropriate.

Priority: The priorities break down the goals of the long-term *Puget Sound Water Quality Management Plan* into smaller, more specific pieces that focus the work of the Action Team on the objectives that are the most important to make progress on together during the 2007-2009 biennium, based on an assessment of the existing threats and opportunities in Puget Sound.

Long-term goal: For each priority this is an environmental condition or outcome that represents a significant aspect of resolving the problem over a time period that extends beyond the two-year budget period.

Strategies: For each priority these are the key methods or approaches that describe how the partnership will achieve progress on the priority during the two-year budget period.

Proposed results: Each priority includes results that Action Team partners are proposing to achieve, based on funding they receive under the 2007-2009 biennial budget.

A comprehensive glossary of terms used in this plan is in the *Puget Sound Water Quality Management Plan* at http://www.psat.wa.gov/Publications/manplan00/mp_index.htm.

Proposed Budget for the 2007-2009 Puget Sound Conservation and Recovery Plan

Tables and graphs on the following pages present information on the budget proposed by state agencies and university programs for implementing the 2007-2009 *Puget Sound Conservation and Recovery Plan.*

Key To Budget Table Information

Budget Code: A budget code is assigned by agencies to a programmatic or topical division of agency funds in the work plan. Funding under each budget code identifies activities or a program that supports one or more related priorities and results in the work plan.

Title: Short descriptive title of the budget activity.

Carry Forward Level Proviso Funds: Funds appropriated as a proviso by the legislature, that were specifically designated to implement the Puget Sound work plan during the 2005-2007 biennium and are carried forward in proposed budgets for 2007-2009.

Other Funds: Funds carried forward from the previous biennium in proposed budgets that agencies are voluntarily reporting on to the Action Team so that Puget Sound benefits can be tracked.

Proposed Enhancements for 2007-2009: Proposed increases in funding by state agencies for the 2007-2009 biennium.

Total: The total amount of funds proposed as carry forward proviso funds, other funds, and proposed enhancements for 2007-2009.

Fund: The source of the funds (see list below).

Codes for Funding Sources

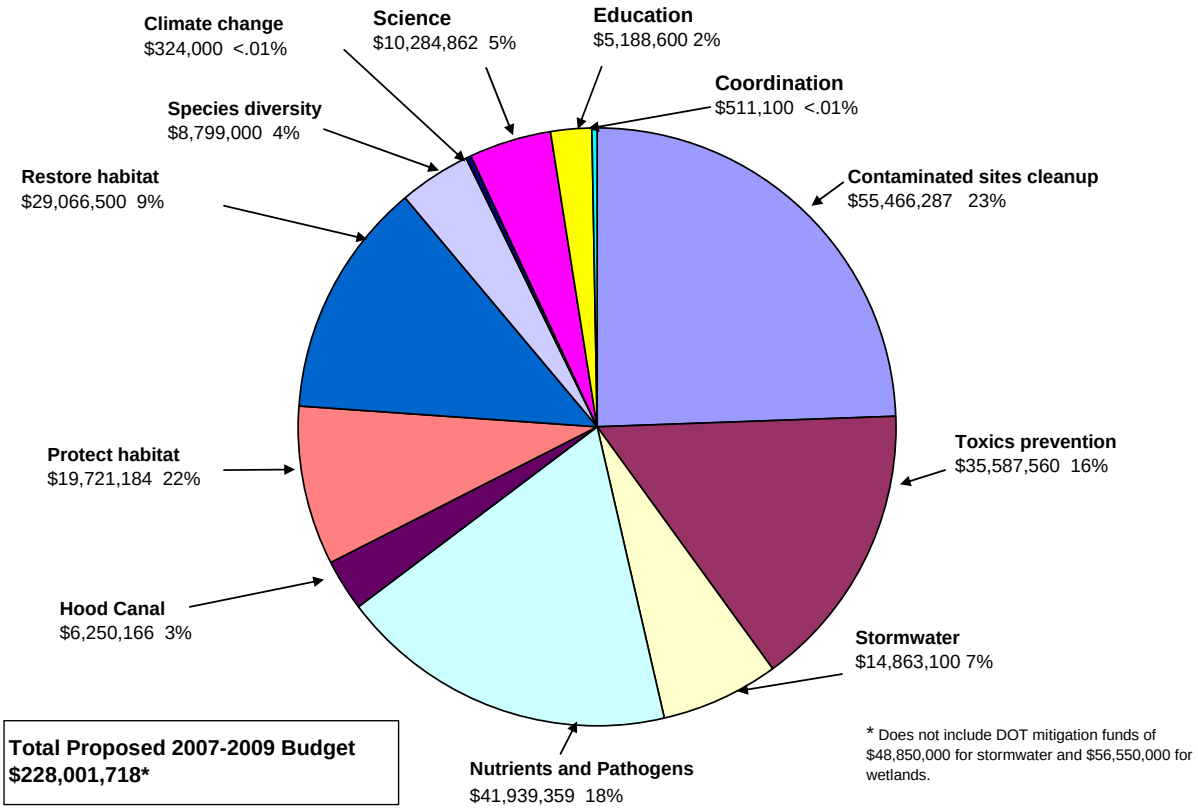
Operating Fund Sources

ALEA	Aquatic Lands Enhancement Account
DVRA	Derelict Vessel Removal Account
FAWA	Freshwater Aquatic Weed Account
GF-S	General Fund-State
GF-F	General Fund-Federal
GF-P/L	General Fund-Private Local
HWAA	Hazardous Waste Assistance Account
LTCA	Local Toxics Control Account
MVF	Motor Vehicle Fund
OSAA	Oil Spill Assistance Account
OSPA	Oil Spill Prevention Account
STCA Op	State Toxics Control Account
VRA	Vessel Response Account
WQA	Water Quality Account
WQPF	Water Quality Permit Fees

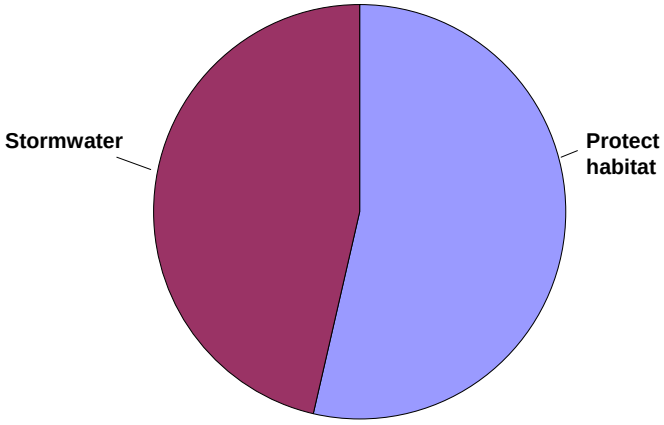
Capital Fund Sources

GF-F Cap	General Fund-Federal - Capital
SBCA Cap	State Building Construction Account – Capital
SRF Cap	State Water Pollution Control Revolving Fund – Capital
STCA Cap	State Toxics Control Account - Capital
WQA Cap	Water Quality Account- Capital

Figure 1: 2007-2009 Puget Sound Conservation and Recovery Plan Proposed Budget by Priority



Department of Transportation Mitigation Funds by Priority



Total WSDOT wetland and stormwater mitigation funds $105,510,000

Table 1: Proposed Budget by Priority

Budget Code	Title	Carry-forward levels of proviso funds	Other Funds	Proposed Enhancements	Total
Priority 1: Clean up contaminated sites and sediments					
DOE-07	Contaminated sediments, dredging and various Puget Sound cleanups	$1,181,000	$32,704,000	$9,674,887	$43,559,887
DOE-16	Puget Sound cleanup and restoration - various		$4,000,000	$705,000	$4,705,000
DOE-17	Voluntary cleanup within 0.5 miles of Puget Sound		$730,000		$730,000
DOE-18	Puget Sound cleanup and restoration - aquatic		$5,000,000	$905,000	$5,905,000
DNR-03	State-owned aquatic lands cleanup	$170,000		$21,400	$191,400
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$105,000			$105,000
DOT-02	Contaminated sediments		$270,000		$270,000
Priority 1: Clean up contaminated sites and sediments TOTAL		**$1,456,000**	**$42,704,000**	**$11,306,287**	**$55,466,287**
Priority 2: Prevent toxic contamination					
WSDA-01	Pesticide technical assistance	$74,000			$74,000
DOE-02	Wastewater discharge permits	$3,181,220	$1,195,255	$280,000	$4,656,475
DOE-09	Oil spills prevention and response	$705,000	$11,976,000		$12,681,000
DOE-13	Persistent Bioaccumulative Toxin (PBT) Strategy		$1,454,000		$1,454,000
DOE-14	Technical Resources for Engineering Efficiency (TREE)		$25,000		$25,000
DNR-07	Puget Sound creosote removal			$4,000,000	$4,000,000
PRC-06	Toxics and creosote removal and structure replacement	$300,000		$3,972,085	$4,272,085
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$350,000			$350,000
PSAT-12	Puget Sound Toxics Loading and Fate			$1,200,000	$1,200,000
DOT-05	Creosote piling removal		$6,500,000		$6,500,000
UW-02	Oil spill prevention education	$170,000		$55,000	$225,000
UW-03	Small Oil Spill Study			$150,000	$150,000

Budget Code	Title	Carry-forward levels of proviso funds	Other Funds	Proposed Enhancements	Total
Priority 2: Prevent toxic contamination TOTAL		**$4,780,220**	**$21,150,255**	**$9,657,085**	**$35,587,560**
Priority 3: Prevent harm from stormwater runoff					
DOE-06	Stormwater program	$1,143,000	$315,000	$280,000	$1,738,000
DOE-19	Local Innovative Stormwater Projects	$2,500,000		$7,750,000	$10,250,000
PRC-04	Stormwater runoff			$1,844,800	$1,844,800
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$480,300			$480,300
PSAT-07	Low impact development local ordinance development and training			$550,000	$550,000
DOT-01	Stormwater migitation		$48,850,000		$48,850,000
Priority 3: Prevent harm from stormwater runoff TOTAL		**$4,123,300**	**$49,165,000**	**$10,424,800**	**$63,713,100**
Priority 4: Prevent nutrient and pathogen pollution					
WSCC-01	Technical assistance and funding for Puget Sound conservation districts for water quality projects	$197,000			$197,000
WSCC-02	Implementation of Puget Sound conservation district water quality projects			$2,426,500	$2,426,500
DOE-04	Nonpoint source pollution	$1,110,000	$1,196,741	$560,000	$2,866,741
DOE-20	Helping Homeowners Save the Sound (onsite sewage systems)	$1,500,000		$3,000,000	$4,500,000
DOH-02	Protection and restoration of shellfish beds	$953,300			$953,300
DOH-03	Recreational shellfish program	$676,000			$676,000
DOH-04	Onsite sewage management	$1,304,800			$1,304,800
DOH-05	Shoreline surveys for shellfish program			$206,000	$206,000
DOH-06	Large onsite sewage systems technical assistance and regulatory oversight			$770,000	$770,000
	Local health jurisdiction onsite plan implementation			$2,140,000	$2,140,000
DOH-07	Maintenance level onsite systems support for local health jurisdictions		$860,000		$860,000
	Local health jurisdiction support for data systems and contract management		$298,000		$298,000

Budget Code	Title	Carry-forward levels of proviso funds	Other Funds	Proposed Enhancements	Total
PRC-01	Marina and boater grants program		$925,000		$925,000
PRC-02	Environmental education for boaters	$191,000	$75,000		$266,000
PRC-03	Wastewater management and water conservation	$12,946,903		$10,183,115	$23,130,018
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$420,000			$420,000
Priority 4: Prevent nutrient and pathogen pollution TOTAL		**$19,299,003**	**$3,354,741**	**$19,285,615**	**$41,939,359**
Special Focus Area: Hood Canal					
DOE-15	Hoodsport to Skokomish wastewater facilities	$1,000,000			$1,000,000
	Hood Canal counties onsite sewage system surveys	$460,000			$460,000
	Belfair and Hoodsport stormwater management plans	$300,000			$300,000
	Belfair area wastewater facility design	$802,352	$1,107,814		$1,910,166
	Hood Canal onsite sewage system corrections	$1,000,000			$1,000,000
DNR-04	Deepwater geoduck and sea cucumber study			$650,000	$650,000
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$310,000			$310,000
PSAT-08	Hood Canal education and public involvement funds			$200,000	$200,000
PSAT-09	Hood Canal onsites nitrogen study and monitoring			$420,000	$420,000
Hood Canal low dissolved oxygen problem TOTAL		**$3,872,352**	**$1,107,814**	**$1,270,000**	**$6,250,166**
Priority 5: Protect functioning marine and freshwater habitats					
CTED-01	Technical assistance for local planning		$126,336		$126,336
DOE-03	Watershed planning		$3,500,000	$1,000,000	$4,500,000
DOE-08	Wetland protection and restoration	$450,400		$1,541,600	$1,992,000
DOE-10	Aquatic nuisance species	$70,000	$46,848		$116,848
DOE-11	Shoreline Management Act		$5,136,000	$4,679,000	$9,815,000
DFW-01	Puget Sound technical assistance for nearshore and estuarine habitat	$150,000			$150,000
DFW-04	Aquatic nuisance species and ballast water programs	$170,000			$170,000
DFW-13	Shoreline guidance for local governments			$320,000	$320,000

Budget Code	Title	Carry-forward levels of proviso funds	Other Funds	Proposed Enhancements	Total
DFW-14	HPA program compliance and effectiveness, including evaluation of mitigation			$300,000	$300,000
DFW-19	Aquatic Habitat Guidelines for shoreline protection alternatives			$505,000	$505,000
DNR-02	Management of wetlands	$36,000			$36,000
DNR-10	Aquatic Reserves baseline			$50,000	$50,000
PSAT 02-03	Policy and technical guidance and outreach to Puget Sound communities	$450,000			$450,000
PSAT-11	Sustainable Shorelines			$1,190,000	$1,190,000
DOT-03	Wetland impact mitigation		$56,550,000		$56,550,000
Priority 5	**Protect functioning habitats TOTAL**	**$1,326,400**	**$65,359,184**	**$9,585,600**	**$76,271,184**
Priority 6: Restore degraded marine and freshwater habitats					
WSCC-01	Technical assistance and funding for Puget Sound conservation districts for restoration projects	$197,000			$197,000
WSCC-02	Implementation of Puget Sound conservation district restoration projects			$2,426,500	$2,426,500
DFW-02	Puget Sound field assistance for nearshore and estuarine habitat	$690,000			$690,000
DFW-09	Estuary and salmon restoration projects		$5,000,000	$5,000,000	$10,000,000
DFW-12	Tunicate response			$425,000	$425,000
DFW-16	Deschutes Estuary Feasibility Study			$135,000	$135,000
DFW-17	Expand derelict gear removal outside of Northwest Straits			$286,000	$286,000
DNR-05	Invasive Species Council participation			$50,000	$50,000
DNR-06	Estuary restoration projects			$200,000	$200,000
DNR-09	One-time derelict vessels removal increase		$1,037,000	$450,000	$1,487,000
PRC-05	Habitat improvement			$4,000,000	$4,000,000
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$340,000			$340,000

Budget Code	Title	Carry-forward levels of proviso funds	Other Funds	Proposed Enhancements	Total
PSAT-10	Invasive species tunicate eradication			$330,000	$330,000
DOT-04	Fish passage barrier inventory and removal		$8,500,000		$8,500,000
Priority 6	**Restore degraded habitats TOTAL**	**$1,227,000**	**$14,537,000**	**$13,302,500**	**$29,066,500**
Priroity 7: Protect species diversity					
DOE-12	Northwest Straits Commission		$3,200,000		$3,200,000
DFW-03	Forage Fish Spawning Habitat Inventory project	$350,000			$350,000
DFW-11	Requirements for implementing Puget Sound steelhead management		$1,100,000		$1,100,000
DFW-18	Identifying priority juvenile salmonid habitat in the nearshore			$750,000	$750,000
DFW-20	An integrated approach to understanding forage fish ecology			$845,000	$845,000
DFW-21	Orca conservation, recovery and monitoring			$350,000	$350,000
DFW-22	Fish In/Fish Out Monitoring			$750,000	$750,000
DNR-08	Endangered Species Act - Habitat Conservation Plan		$644,000	$490,000	$1,134,000
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$320,000			$320,000
Priority 7	**Protect species diversity TOTAL**	**$670,000**	**$4,944,000**	**$3,185,000**	**$8,799,000**
Priority 8: Prepare for and adapt Puget Sound efforts to a changing climate					
PSAT-02-03	Policy and technical guidance and outreach to Puget Sound communities	$124,000			$124,000
PSAT-13	Climate change preparation and planning			$200,000	$200,000
Priority 8	**Prepare for climate change TOTAL**	**$124,000**	**$0**	**$200,000**	**$324,000**
The role of science					
DOE-01	Ambient monitoring and laboratory certification	$4,065,692		$890,000	$4,955,692
DFW-05	Fish contaminant status and trend monitoring	$704,000			$704,000
DFW-06	Long-term monitoring of Puget Sound marine birds	$220,000			$220,000

Budget Code	Title	Carry-forward levels of proviso funds	Other Funds	Proposed Enhancements	Total
DFW-07	Puget Sound marine fish recovery	$680,000			$680,000
DFW-08	Census of burrow-nesting seabirds in Puget Sound	$150,000			$150,000
DFW-10	Comprehensive surveys for marine rockfish		$338,000		$338,000
DFW-15	Remote sensing satellite imagery monitoring of habitat change in Puget Sound			$250,000	$250,000
DOH-01	Monitoring, data management and reporting	$467,900			$467,900
DNR-01	Nearshore habitat program	$1,652,050		$68,000	$1,720,050
DNR-11	Aquatic Marine Station			$400,220	$400,220
PSAT-05	Coordinate and communicate Puget Sound science	$399,000			$399,000
The Role of Science TOTAL		**$8,338,642**	**$338,000**	**$1,608,220**	**$10,284,862**
Education and Communication					
DFW-23	Puget Sound Citizen Science and Education		$400,000		$400,000
PSAT-04	Inform and engage people in Puget Sound conservation and recovery	$1,538,600			$1,538,600
PSAT-06	Puget Sound Partnership communication, education and outreach campaign			$2,500,000	$2,500,000
UW-01	Water quality agents	$330,000			$330,000
WSU-01	Water quality agents	$420,000			$420,000
Education and Communication TOTAL		**$2,288,600**	**$400,000**	**$2,500,000**	**$5,188,600**
Coordinating Puget Sound conservation and recovery					
PSAT-01	Coordinate the work of Puget Sound Action Team and Council	$511,100			$511,100
Coordinating Puget Sound conservation and recovery TOTAL		**$511,100**			**$511,100**
Puget Sound Conservation and Recovery Plan Total		**$48,016,617**	**$203,059,994**	**$82,325,107**	**$333,401,718**

Figure 2: Proposed 2007-2009 Budget by Agency

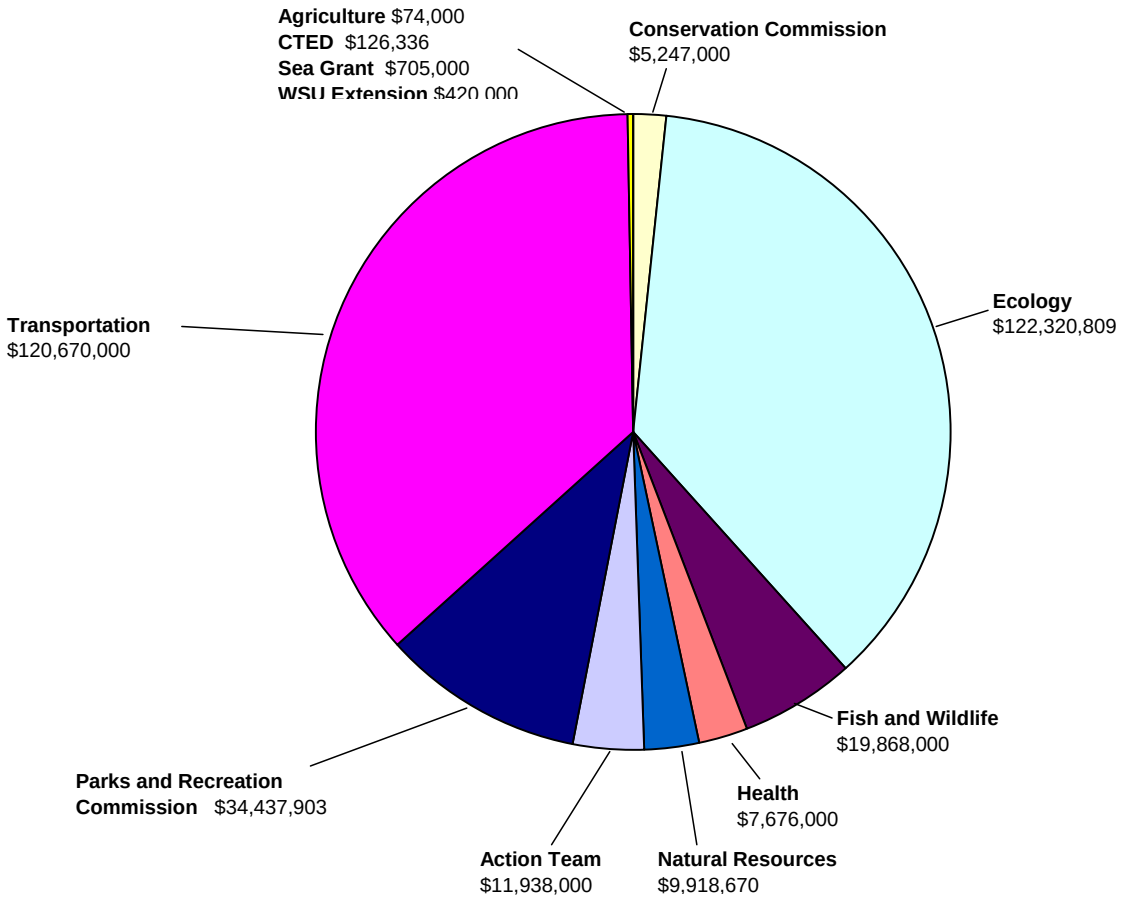


Table 2: Proposed 2007-2009 Budget by Agency

Agency	Operating or Capital Funds	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
Agriculture	Operating	$74,000	$0	$0	$74,000
	Capital	$0	$0	$0	$0
	Total	$74,000	$0	$0	**$74,000**
Community, Trade and Economic Development	Operating	$0	$126,336	$0	$126,336
	Capital	$0	$0	$0	$0
	Total		$126,336		**$126,336**
Conservation Commission	Operating	$394,000		$4,853,000	$5,247,000
	Capital				
	Total	$394,000		$4,853,000	**$5,247,000**
Ecology	Operating	$12,206,312	$61,478,844	$18,905,487	$92,590,643
	Capital	$7,262,352	$10,107,814	$12,360,000	$29,730,166
	Total	$19,468,664	$71,586,658	$31,265,487	**$122,320,809**
Fish and Wildlife	Operating	$3,114,000	$1,838,000	$4,916,000	$9,868,000
	Capital		$5,000,000	$5,000,000	$10,000,000
	Total	$3,114,000	$6,838,000	$9,916,000	**$19,868,000**
Health	Operating	$3,402,000	$1,158,000	$3,116,000	$7,676,000
	Capital				
	Total	$3,402,000	$1,158,000	$3,116,000	**$7,676,000**
Natural Resources	Operating	$1,858,050	$1,681,000	$5,329,400	$8,868,450
	Capital			$1,050,220	$1,050,220

Agency	Operating or Capital Funds	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
	Total	$1,858,050	$1,681,000	$6,379,620	**$9,918,670**
Puget Sound Action Team	Operating	$5,348,000		$6,590,000	$11,938,000
	Capital				
	Total	$5,348,000		$6,590,000	**$11,938,000**
Parks and Recreation Commission	Operating	$191,000	$75,000		$266,000
	Capital	$13,246,903	$925,000	$20,000,000	$34,171,903
	Total	$13,437,903	$1,000,000	$20,000,000	**$34,437,903**
Transportation	Operating		$120,670,000		$120,670,000
	Capital				
	Total		$120,670,000		**$120,670,000**
Washington Sea Grant	Operating	$500,000		$205,000	$705,000
	Capital				
	Total	$500,000		$205,000	**$705,000**
WSU Extension	Operating	$420,000			$420,000
	Capital				
	Total	$420,000			**$420,000**
All Agencies Operating		$27,507,362	$187,027,180	$43,914,887	$258,449,429
All Agencies Capital		$20,509,255	$16,032,814	$38,410,220	$74,952,289
Total All Agencies		$48,016,617	$203,059,994	$82,325,107	$333,401,718

Table 3: Propose 2007-2009 Budget by Agency and Budget Code Activity

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
DEPARTMENT OF AGRICULTURE					
WSDA-01	Pesticide Technical Assistance	$74,000			$74,000
Total	**Department of Agriculture**	**$74,000**			**$74,000**
DEPARTMENT OF COMMUNITY, TRADE AND ECONOMIC DEVELOPMENT					
CTED-01	Technical assistance for local planning		$126,336		$126,336
Total	**Community, Trade and Economic Development**		**$126,336**		**$126,336**
CONSERVATION COMMISSION					
WSCC-01	Technical assistance and funding for Puget Sound conservation districts for water quality projects	$394,000			$394,000
WSCC-02	Implementation of Puget Sound conservation district water quality projects			$4,853,000	$4,853,000
Total	**Conservation Commission**	**$394,000**		**$4,853,000**	**$5,247,000**
DEPARTMENT OF ECOLOGY					
DOE-01	Ambient monitoring and laboratory certification	$4,065,692		$890,000	$4,955,692
DOE-02	Wastewater discharge permits	$3,181,220	$1,195,255	$280,000	$4,656,475
DOE-03	Watershed planning		$3,500,000	$1,000,000	$4,500,000
DOE-04	Nonpoint source pollution	$1,110,000	$1,196,741	$560,000	$2,866,741
DOE-06	Stormwater program	$1,143,000	$315,000	$280,000	$1,738,000
DOE-07	Contaminated sediments, dredging and various Puget Sound cleanups	$1,181,000	$32,704,000	$9,674,887	$43,559,887
DOE-08	Wetland protection and restoration	$450,400		$1,541,600	$1,992,000
DOE-09	Oil spills prevention and response	$705,000	$11,976,000		$12,681,000

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
DOE-10	Aquatic nuisance species	$70,000	$46,848		$116,848
DOE-11	Shoreline management		$5,136,000	$4,679,000	$9,815,000
DOE-12	Northwest Straits Commission		$3,200,000		$3,200,000
DOE-13	Persistent Bioaccumulative Toxin (PBT) Strategy		$1,454,000		$1,454,000
DOE-14	Technical Resources for Engineering Efficiency (TREE)		$25,000		$25,000
DOE-15	Hoodsport to Skokomish wastewater facilities	$1,000,000			$1,000,000
	Hood Canal Counties onsite sewage system surveys	$460,000			$460,000
	Belfair and Hoodsport Stormwater Management Plans	$300,000			$300,000
	Belfair area wastewater facility design	$802,352	$1,107,814		$1,910,166
	Hood Canal onsite sewage system corrections	$1,000,000			$1,000,000
DOE-16	Puget Sound cleanup and restoration - upland		$4,000,000	$705,000	$4,705,000
DOE-17	Voluntary cleanup within 0.5 miles of Puget Sound		$730,000		$730,000
DOE-18	Puget Sound cleanup and restoration - aquatic		$5,000,000	$905,000	$5,905,000
DOE-19	Local Innovative Stormwater Projects	$2,500,000		$7,750,000	$10,250,000
DOE-20	Helping Homeowners Save the Sound (onsite sewage systems)	$1,500,000		$3,000,000	$4,500,000
Total	**Department of Ecology**	**$31,374,976**	**$127,681,502**	**$50,170,974**	**$209,227,452**
DEPARTMENT OF FISH AND WILDLIFE					
DFW-01	Puget Sound technical assistance for nearshore and estuarine habitat	$150,000			$150,000
DFW-02	Puget Sound field assistance for nearshore and estuarine habitat	$690,000			$690,000
DFW-03	Forage Fish Spawning Habitat Inventory project	$350,000			$350,000

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
DFW-04	Aquatic nuisance species and ballast water programs	$170,000			$170,000
DFW-05	Fish contaminant status and trend monitoring	$704,000			$704,000
DFW-06	Long-term monitoring of Puget Sound marine birds	$220,000			$220,000
DFW-07	Puget Sound marine fish recovery	$680,000			$680,000
DFW-08	Census of burrow-nesting seabirds in Puget Sound	$150,000			$150,000
DFW-09	Estuary and salmon restoration projects		$5,000,000	$5,000,000	$10,000,000
DFW-10	Comprehensive surveys for marine rockfish		$338,000		$338,000
DFW-11	Requirements for implementing Puget Sound steelhead management		$1,100,000		$1,100,000
DFW-12	Tunicate response			$425,000	$425,000
DFW-13	Shoreline guidance for local governments			$320,000	$320,000
DFW-14	HPA program compliance and effectiveness, including evaluation of mitigation			$300,000	$300,000
DFW-15	Remote sensing satellite imagery monitoring of habitat change in Puget Sound			$250,000	$250,000
DFW-16	Deschutes Estuary Feasibility Study			$135,000	$135,000
DFW-17	Expand derelict gear removal outside of Northwest Straits			$286,000	$286,000
DFW-18	Identifying priority juvenile salmonid habitat in the nearshore			$750,000	$750,000
DFW-19	Aquatic Habitat Guidelines for shoreline protection alternatives			$505,000	$505,000
DFW-20	An integrated approach to understanding forage fish ecology			$845,000	$845,000
DFW-21	Orca conservation, recovery and monitoring			$350,000	$350,000
DFW-22	Fish In/Fish Out Monitoring			$750,000	$750,000
DFW-23	Puget Sound Citizen Science and Education		$400,000		$400,000

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
Total	**Department of Fish and Wildlife**	**$3,114,000**	**$6,838,000**	**$9,916,000**	**$19,868,000**
DEPARTMENT OF HEALTH					
DOH-01	Monitoring, data management and reporting	$467,900			$467,900
DOH-02	Protection and restoration of shellfish beds	$953,300			$953,300
DOH-03	Recreational shellfish program	$676,000			$676,000
DOH-04	Onsite sewage management	$1,304,800			$1,304,800
DOH-05	Shoreline surveys for shellfish program			$206,000	$206,000
DOH-06	Large onsite sewage systems technical assistance and regulatory oversight			$770,000	$770,000
	Local health jurisdiction onsite plan implementation			$2,140,000	$2,140,000
DOH-07	Maintenance level onsite systems support for local health jurisdictions		$860,000		$860,000
	Local health jurisdiction support for data systems and contract management		$298,000		$298,000
Total	**Department of Health**	**$3,402,000**	**$2,018,000**	**$3,116,000**	**$8,536,000**
DEPARTMENT OF NATURAL RESOURCES					
DNR-01	Nearshore habitat program	$1,652,050		$68,000	$1,720,050
DNR-02	Management of wetlands	$36,000			$36,000
DNR-03	State-owned aquatic lands cleanup	$170,000		$21,400	$191,400
DNR-04	Deepwater geoduck and sea cucumber study			$650,000	$650,000
DNR-05	Invasive Species Council participation			$50,000	$50,000
DNR-06	Estuarine restoration projects			$200,000	$200,000
DNR-07	Puget Sound creosote removal			$4,000,000	$4,000,000
DNR-08	Endangered Species Act - Habitat Conservation Plan		$644,000	$490,000	$1,134,000
DNR-09	One-time derelict vessels removal increase		$1,037,000	$450,000	$1,487,000
DNR-10	Aquatic Reserves baseline			$50,000	$50,000

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
DNR-11	Aquatic Marine Station			$400,220	$400,220
Total	**Department of Natural Resources**	**$1,858,050**	**$1,681,000**	**$6,379,620**	**$9,918,670**
STATE PARKS AND RECREATION COMMISSION					
PRC-01	Marina and boater grants program		$925,000		$925,000
PRC-02	Environmental education for boaters	$191,000	$75,000		$266,000
PRC-03	Wastewater management and water conservation	$12,946,903		$10,183,115	$23,130,018
PRC-04	Stormwater runoff			$1,844,800	$1,844,800
PRC-05	Habitat improvement			$4,000,000	$4,000,000
PRC-06	Toxics and creosote removal and structure replacement	$300,000		$3,972,085	$4,272,085
Total	**State Parks and Recreation Commission**	**$13,628,903**	**$1,075,000**	**$20,000,000**	**$34,703,903**
PUGET SOUND ACTION TEAM STAFF					
PSAT-01	Coordinate the work of Puget Sound Action Team and Council	$511,100			$511,100
PSAT-02	Policy guidance and technical assistance on Puget Sound environmental priorities	$1,509,500			$1,509,500
PSAT-03	Outreach to Puget Sound governments and communities on environmental priorities	$1,389,800			$1,389,800
PSAT-04	Inform and engage people in Puget Sound conservation and recovery	$1,538,600			$1,538,600
PSAT-05	Coordinate and communicate Puget Sound science	$399,000			$399,000
PSAT-06	Puget Sound Partnership communication, education and outreach campaign			$2,500,000	$2,500,000
PSAT-07	Low impact development local ordinance development and training			$550,000	$550,000
PSAT-08	Hood Canal education and public involvement funds			$200,000	$200,000

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total
PSAT-09	Hood Canal onsites nitrogen study and monitoring			$420,000	$420,000
PSAT-10	Invasive species tunicate eradication			$330,000	$330,000
PSAT-11	Sustainable shorelines			$1,190,000	$1,190,000
PSAT-12	Puget Sound Toxics Loading and Fate			$1,200,000	$1,200,000
PSAT-13	Climate change preparation and planning			$200,000	$200,000
Total	**Puget Sound Action Team staff**	**$5,348,000**	**$0**	**$6,590,000**	**$11,938,000**
DEPARTMENT OF TRANSPORTATION					
DOT-01	Stormwater		$48,850,000		$48,850,000
DOT-02	Contaminated sediments		$270,000		$270,000
DOT-03	Wetland impact mitigation		$56,550,000		$56,550,000
DOT-04	Fish passage barrier inventory and removal		$8,500,000		$8,500,000
DOT-05	Creosote piling removal		$6,500,000		$6,500,000
Total	**Department of Transportation**	**$0**	**$120,670,000**	**$0**	**$120,670,000**
UNIVERSITY OF WASHINGTON SEA GRANT PROGRAM					
UW-01	Water quality agents	$330,000			$330,000
UW-02	Oil spill prevention education	$170,000		$55,000	$225,000
UW-03	Small Oil Spill Study			$150,000	$150,000
Total	**UW Sea Grant Program**	**$500,000**	**$0**	**$205,000**	**$705,000**
WASHINGTON STATE UNIVERSITY EXTENSION					
WSU-01	Water quality agents	$420,000			$420,000
Total	**WSU Extension**	**$420,000**	**$0**	**$0**	**$420,000**
TOTAL	**ALL AGENCIES**	**$48,016,617**	**$203,059,994**	**$82,325,107**	**$333,401,718**

Table 4: Proposed 2007-2009 Budget by Agency, Activity and Fund Source

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
DEPARTMENT OF AGRICULTURE						
WSDA-01	Pesticide Technical Assistance	$74,000			$74,000	GF-S
Total	**Department of Agriculture**	**$74,000**	**$0**	**$0**	**$74,000**	
DEPARTMENT OF COMMUNITY, TRADE AND ECONOMIC DEVELOPMENT						
CTED-01	Technical assistance for local planning		$126,336		$126,336	GF-S
Total	**Community, Trade and Economic Development**	**$0**	**$126,336**	**$0**	**$126,336**	
CONSERVATION COMMISSION						
WSCC-01	Technical assistance and funding for Puget Sound conservation districts for water quality projects	$394,000			$394,000	GF-S
WSCC-02	Implementation of Puget Sound conservation district water quality projects			$4,853,000	$4,853,000	WQA
Total	**Conservation Commission**	**$394,000**	**$0**	**$4,853,000**	**$5,247,000**	
DEPARTMENT OF ECOLOGY						
DOE-01	Ambient monitoring and laboratory certification	$3,280,886		$445,000	$3,725,886	GF-S
		$540,806			$540,806	WQA
		$244,000			$244,000	GF-F
				$445,000	$445,000	WQPF
DOE-02	Wastewater discharge permits	$70,000			$70,000	GF-S
		$3,111,220		$280,000	$3,391,220	WQPF

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
			$1,195,255		$1,195,255	GF-F
DOE-3	Watershed planning		$3,500,000		$3,500,000	WQA
				$1,000,000	$1,000,000	GF-S
DOE-04	Nonpoint source pollution	$1,110,000		$140,000	$1,250,000	GF-S
			$1,196,741		$1,196,741	GF-F
				$280,000	$280,000	STCA
				$140,000	$140,000	WQPF
DOE-06	Stormwater program	$1,143,000			$1,143,000	STCA
			$315,000	$280,000	$595,000	WQPF
DOE-07	Contaminated sediments, dredging and various Puget Sound cleanups	$1,181,000			$1,181,000	STCA
			$32,704,000	$9,674,887	$42,378,887	LTCA
DOE-08	Wetland protection and restoration	$362,000		$1,541,600	$1,903,600	GF-S
		$88,400			$88,400	GF-F
DOE-09	Oil spills prevention and response		$2,876,000		$2,876,000	VRA
		$705,000	$4,600,000		$5,305,000	OSPA
			$4,500,000		$4,500,000	STCA
DOE-10	Aquatic nuisance species	$70,000			$70,000	STCA
			$46,848		$46,848	FAWA
DOE-11	Shoreline Management Act		$4,818,000	$4,679,000	$9,497,000	GF-S
			$318,000		$318,000	GF-F
DOE-12	Northwest Straits Commission		$3,200,000		$3,200,000	GF-F
DOE-13	Persistent Bioaccumulative Toxin (PBT) Strategy		$1,454,000		$1,454,000	STCA
DOE-14	Technical Resources for Engineering Efficiency (TREE)		$12,500		$12,500	HWAA
			$12,500		$12,500	STCA
DOE-15	Hoodsport to Skokomish wastewater facilities	$1,000,000			$1,000,000	WQA Cap
	Hood Canal Counties onsite sewage system surveys	$460,000			$460,000	WQA Cap

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
	Belfair and Hoodsport Stormwater Management Plans	$300,000			$300,000	LTCA
	Belfair area wastewater facility design	$802,352	$1,107,814		$1,910,166	SRF Cap
	Hood Canal onsite sewage system corrections	$1,000,000			$1,000,000	SRF Cap
DOE-16	Puget Sound cleanup and restoration - upland		$4,000,000	$705,000	$4,705,000	STCA Cap
DOE-17	Voluntary cleanup within 0.5 miles of Puget Sound		$730,000		$730,000	STCA
DOE-18	Puget Sound cleanup and restoration - aquatic		$5,000,000	$905,000	$5,905,000	STCA Cap
DOE-19	Local Innovative Stormwater Projects	$2,500,000		$7,750,000	$10,250,000	SBCA Cap
DOE-20	Helping Homeowners Save the Sound (onsite sewage systems)	$1,500,000		$3,000,000	$4,500,000	WQA Cap
Total	**Department of Ecology****	**$19,468,664**	**$71,586,658**	**$31,265,487**	**$122,320,809**	
DEPARTMENT OF FISH AND WILDLIFE						
DFW-01	Puget Sound technical assistance for nearshore and estuarine habitat	$150,000			$150,000	GF-S
DFW-02	Puget Sound field assistance for nearshore and estuarine habitat	$690,000			$690,000	GF-S
DFW-03	Forage Fish Spawning Habitat Inventory project	$350,000			$350,000	GF-S
DFW-04	Aquatic nuisance species and ballast water programs	$170,000			$170,000	GF-S
DFW-05	Fish contaminant status and trend monitoring	$704,000			$704,000	GF-S
DFW-06	Long-term monitoring of Puget Sound marine birds	$220,000			$220,000	GF-S
DFW-07	Puget Sound marine fish recovery	$680,000			$680,000	GF-S
DFW-08	Census of burrow-nesting seabirds in Puget Sound	$150,000			$150,000	GF-S
DFW-09	Estuary and salmon restoration projects		$5,000,000	$5,000,000	$10,000,000	SBCA Cap
DFW-10	Comprehensive surveys for marine rockfish		$338,000		$338,000	GF-S

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
DFW-11	Requirements for implementing Puget Sound steelhead management		$1,100,000		$1,100,000	GF-S
DFW-12	Tunicate response			$425,000	$425,000	GF-S
DFW-13	Shoreline guidance for local governments			$320,000	$320,000	GF-S
DFW-14	HPA program compliance and effectiveness, including evaluation of mitigation			$300,000	$300,000	GF-S
DFW-15	Remote sensing satellite imagery monitoring of habitat change in Puget Sound			$250,000	$250,000	GF-S
DFW-16	Deschutes Estuary Feasibility Study			$135,000	$135,000	GF-S
DFW-17	Expand derelict gear removal outside of Northwest Straits			$286,000	$286,000	GF-S
DFW-18	Identifying priority juvenile salmonid habitat in the nearshore			$750,000	$750,000	GF-S
DFW-19	Aquatic Habitat Guidelines for shoreline protection alternatives			$505,000	$505,000	GF-S
DFW-20	An integrated approach to understanding forage fish ecology			$845,000	$845,000	GF-S
DFW-21	Orca conservation, recovery and monitoring			$350,000	$350,000	GF-S
DFW-22	Fish In/Fish Out Monitoring			$750,000	$750,000	GF-S
DFW-23	Puget Sound Citizen Science and Education		$400,000		$400,000	GF-S
Total	**Department of Fish and Wildlife****	**$3,114,000**	**$6,838,000**	**$9,916,000**	**$19,868,000**	
DEPARTMENT OF HEALTH						
DOH-01	Monitoring, data management and reporting	$467,900			$467,900	GF-S
DOH-02	Protection and restoration of shellfish beds	$953,300			$953,300	GF-S
DOH-03	Recreational shellfish program	$676,000			$676,000	GF-P/L
DOH-04	Onsite sewage management	$1,304,800			$1,304,800	GF-S
DOH-05	Shoreline surveys for shellfish program			$206,000	$206,000	GF-S
DOH-06	Large onsite sewage systems technical assistance and regulatory oversight			$770,000	$770,000	GF-S

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
	Local health jurisdiction onsite plan implementation			$2,140,000	$2,140,000	GF-S
DOH-07	Maintenance level onsite systems support for local health jurisdictions		$430,000		$430,000	GF-S
			$430,000		$430,000	ALEA
	Local health jurisdiction support for data systems and contract management		$128,000		$128,000	GF-S
			$170,000		$170,000	ALEA
Total	**Department of Health****	**$3,402,000**	**$1,158,000**	**$3,116,000**	**$7,676,000**	
DEPARTMENT OF NATURAL RESOURCES						
DNR-01	Nearshore habitat program	$1,652,050		$68,000	$1,720,050	ALEA
DNR-02	Management of wetlands	$36,000			$36,000	GF-S
DNR-03	State-owned aquatic lands cleanup	$170,000		$21,400	$191,400	STCA
DNR-04	Deepwater geoduck and sea cucumber study			$650,000	$650,000	SBCA Cap
DNR-05	Invasive Species Council participation			$50,000	$50,000	GF-S
DNR-06	Estuarine restoration projects			$200,000	$200,000	ALEA
DNR-07	Puget Sound creosote removal			$4,000,000	$4,000,000	STCA
DNR-08	Endangered Species Act - Habitat Conservation Plan		$644,000	$490,000	$1,134,000	ALEA
DNR-09	One-time derelict vessels removal increase		$1,037,000	$450,000	$1,487,000	DVRA
DNR-10	Aquatic Reserves baseline			$50,000	$50,000	ALEA
DNR-11	Aquatic Marine Station			$400,220	$400,220	SBCA Cap
Total	**Department of Natural Resources****	**$1,858,050**	**$1,681,000**	**$6,379,620**	**$9,918,670**	
STATE PARKS AND RECREATION COMMISSION						
PRC-01	Marina and boater grants program		$925,000		$925,000	GF-F Cap
PRC-02	Environmental education for boaters	$191,000			$191,000	ALEA
			$75,000		$75,000	GF-F
PRC-03	Wastewater management and water conservation	$12,946,903		$10,183,115	$23,130,018	SBCA Cap

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
PRC-04	Stormwater runoff			$1,844,800	$1,844,800	SBCA Cap
PRC-05	Habitat improvement			$4,000,000	$4,000,000	SBCA Cap
PRC-06	Toxics and creosote removal and structure replacement	$300,000		$3,972,085	$4,272,085	SBCA Cap
Total	**State Parks and Recreation Commission**	**$13,437,903**	**$1,000,000**	**$20,000,000**	**$34,437,903**	
PUGET SOUND ACTION TEAM STAFF						
PSAT-01	Coordinate the work of Puget Sound Action Team and Council	$375,600			$375,600	WQA
		$135,500			$135,500	GF-F
PSAT-02	Policy guidance and technical assistance on Puget Sound environmental priorities	$1,125,600			$1,125,600	WQA
		$383,900			$383,900	GF-F
PSAT-03	Outreach to Puget Sound governments and communities on environmental priorities	$1,035,500			$1,035,500	WQA
		$354,300			$354,300	GF-F
PSAT-04	Inform and engage people in Puget Sound conservation and recovery	$1,344,800			$1,344,800	WQA
		$193,800			$193,800	GF-F
PSAT-05	Coordinate and communicate Puget Sound science	$302,500			$302,500	WQA
		$96,500			$96,500	GF-F
PSAT-06	Puget Sound Partnership communication, education and outreach campaign			$2,500,000	$2,500,000	WQA
PSAT-07	Low impact development local ordinance development and training			$550,000	$550,000	WQA
PSAT-08	Hood Canal education and public involvement funds			$200,000	$200,000	WQA
PSAT-09	Hood Canal onsites nitrogen study and monitoring			$420,000	$420,000	GF-S
PSAT-10	Invasive species tunicate eradication			$330,000	$330,000	WQA
PSAT-11	Sustainable shorelines			$1,190,000	$1,190,000	WQA
PSAT-12	Puget Sound Toxics Loading and Fate			$1,200,000	$1,200,000	STCA
PSAT-13	Climate change preparation and planning			$200,000	$200,000	WQA

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
Total	**Puget Sound Action Team staff**	**$5,348,000**	**$0**	**$6,590,000**	**$11,938,000**	
DEPARTMENT OF TRANSPORTATION						
DOT-01	Stormwater		$48,850,000		$48,850,000	MVF
DOT-02	Contaminated sediments		$270,000		$270,000	MVF
DOT-03	Wetland impact mitigation		$56,550,000		$56,550,000	MVF
DOT-04	Fish passage barrier inventory and removal		$8,500,000		$8,500,000	MVF
DOT-05	Creosote piling removal		$6,500,000		$6,500,000	MVF
Total	**Department of Transportation**	**$0**	**$120,670,000**	**$0**	**$120,670,000**	
UNIVERSITY OF WASHINGTON SEA GRANT PROGRAM						
UW-01	Water quality agents	$330,000			$330,000	GF-S
UW-02	Oil spill prevention education	$170,000		$55,000	$225,000	OSAA
UW-03	Small Oil Spill Study			$150,000	$150,000	OSAA
Total	**UW Sea Grant Program**	**$500,000**	**$0**	**$205,000**	**$705,000**	
WASHINGTON STATE UNIVERSITY EXTENSION						
WSU-01	Water quality agents	$420,000			$420,000	GF-S
Total	**WSU Extension**	**$420,000**	**$0**	**$0**	**$420,000**	
Subtotal	All agencies GF-S	$11,916,886	$7,340,336	$16,307,600	$35,564,822	GF-S
Subtotal	All agencies GF-F	$1,496,400	$5,984,996	$0	$7,481,396	GF-F
Subtotal	All agencies WQA	$4,724,806	$3,500,000	$9,823,000	$18,047,806	WQA
Subtotal	All agencies WQPF	$3,111,220	$315,000	$1,145,000	$4,571,220	WQPF
Subtotal	All agencies STCA -Op	$2,564,000	$6,696,500	$5,501,400	$14,761,900	STCA
Subtotal	All agencies LTCA	$300,000	$32,704,000	$9,674,887	$42,678,887	LTCA
Subtotal	All agencies VRA	$0	$2,876,000	$0	$2,876,000	VRA
Subtotal	All agencies OSPA	$705,000	$4,600,000	$0	$5,305,000	OSPA
Subtotal	All agencies FAWA	$0	$46,848	$0	$46,848	FAWA

Budget Code	Title	Carry Forward Levels of Proviso Funding	Other Funds	Proposed Enhancements	Total	Fund
Subtotal	All agencies HWAA	$0	$12,500	$0	$12,500	HWAA
Subtotal	All agencies GF-P/L	$676,000	$0	$0	$676,000	GF-P/L
Subtotal	All agencies ALEA	$1,843,050	$1,244,000	$808,000	$3,895,050	ALEA
Subtotal	All agencies DRVA	$0	$1,037,000	$450,000	$1,487,000	DVRA
Subtotal	All agencies OSAA	$170,000	$0	$205,000	$375,000	OSAA
Subtotal	All agencies MVF	$0	$120,670,000	$0	$120,670,000	MVF
Subtotal	All agencies WQA - Cap	$2,960,000	$0	$3,000,000	$5,960,000	WQA Cap
Subtotal	All agencies GF-F - Cap	$0	$925,000	$0	$925,000	GF-F Cap
Subtotal	All agencies SRF - Cap	$1,802,352	$1,107,814	$0	$2,910,166	SRF Cap
Subtotal	All agencies STCA - Cap	$0	$9,000,000	$1,610,000	$10,610,000	STCA Cap
Subtotal	All agencies SBCA - Cap	$15,746,903	$5,000,000	$33,800,220	$54,547,123	SBCA Cap
TOTAL	**ALL AGENCIES, ALL FUNDS**	**$48,016,617**	**$203,059,994**	**$82,325,107**	**$333,401,718**	

****NOTES**

Ecology: All Department of Ecology proposed enhancements are requested as non-proviso funds.

WDFW: Department of Fish and Wildlife proposed enhancement DFW-15 is proposed as non-proviso funds.

Health: 1) The Department of Health proposed enhancements are requested as non-proviso funds. 2) DOH-07 proposed enhancement is a maintenance-level request to re-appropriate 05-07 funds (formerly DOH-04 funds of $1,300,000 [$700,000 GF-S; $600,000 ALEA] which were slightly higher to accomodate start-up costs).

Natural Resources:1) DNR-03 is a proposed fund shift from ALEA to the STCA. 2) DNR-05 is the Puget Sound portion of a statewide request of $245,000. 3) DNR-06 is the Puget Sound portion of a statewide request of $300,000. 3) DNR-09 is a request to utilize available fund balance to address a backlog of derelict vessels.

The **Appendix of Agency Budget Detail** that accompanies this plan includes further detail on budget proposals as well as the following statewide budget requests that contribute to and will be tracked as results in the plan: 1) Ecology: Reduce Health Risks from Toxic Diesel Pollution; 2) Conservation Commission: Technical assistance and cost share for the Livestock Nutrient Management Program, the Conservation Reserve Enhancement Program, Small Acreage Planning, and Low Impact Development Project Assistance.

Table 5: Proposed Enhancement Requests by Funding Source

Agency	Title	Dollars in 1000s	Budget Code
General Fund State - Operating			
Ecology	Ambient monitoring and lab certification	445	DOE-01
	Watershed planning	1,000	DOE-03
	Nonpoint source pollution	140	DOE-04
	Wetland protection and restoration	1541	DOE-08
	Shoreline Management Act	4,679	DOE-11
WDFW	Tunicate response	425	DFW-12
	Shoreline guidance for local governments	320	DFW-14
	HPA program compliance and effectiveness, including evaluation of mitigation	300	DFW-14
	Remote sensing satellite imagery monitoring of habitat change in Puget Sound	250	DFW-15
	Deschutes Estuary Feasibility Study	135	DFW-16
	Expand derelict gear removal outside of Northwest Straits	286	DFW-17
	Identifying priority juvenile slamonid habitat in the nearshore	750	DFW-18
	Aquatic Habitat Guidelines for shoreline protection alternative	505	DFW-19
	An integrated approach to understanding forage fish ecology	845	DFW-20
	Orca conservation, recovery and monitoring	350	DFW-21
	Fish In/Fish Out monitoring	750	DFW-22
Health	Shoreline surveys for shellfish program	206	DOH-06
	Large onsite sewage systems technical assistance and regulatory oversight	770	DOH-06
	Local health jurisdiction onsite plan implementation	2,140	DOH-06
Natural Resources	Invasive Species Council participation (PS portion of statewide proposal)	50	DNR-05
PSAT	Hood Canal onsites nitrogen study (phase 2) and monitoring	420	PSAT-09
TOTAL	**General Fund State Operating**	**16,307**	
Water Quality Account - Operating			
Conservation Commission	Implementation of Puget Sound conservation district water quality projects	4,853	WSCC-02
PSAT	Puget Sound Partnership communication, education and outreach campaign	2,500	PSAT-06
	Low impact development local ordinance development and training	550	PSAT-07
	Hood Canal education and public involvement funds	200	PSAT-08

Agency	Title	Dollars in 1000s	Budget Code
	Invasive species tunicate eradication	330	PSAT-10
	Sustainable shorelines	1,190	PSAT-11
	Climate change preparation and planning	200	PSAT-13
TOTAL	**Water Quality Account - Operating**	**9,823**	
Water Quality Permit Fees - Operating			
Ecology	Ambient monitoring and laboratory certification	445	DOE-01
	Wastewater discharge permits	280	DOE-02
	Nonpoint source pollution	140	DOE-04
	Stormwater	280	DOE-16
TOTAL	**Water Quality Permit Fees - Operating**	**1,145**	
State Toxics Control Account - Operating			
Ecology	Nonpoint source pollution	280	DOE-04
Natural Resources	State-owned aquatic lands cleanup	21	DNR-03
	Puget Sound creosote removal	4,000	DNR-07
PSAT	Puget Sound Toxics Loading and Fate	1,200	PSAT-12
TOTAL	**State Toxics Control Account - Operating**	**5,501**	
Aquatic Lands Enhancement Account			
Natural Resources	Nearshore habitat program	68	DNR-01
	Estuarine restoration projects (PS portion of a statewide request)	200	DNR-06
	ESA - Habitat Conservation Plan	490	DNR-08
	Aquatic Reserves baseline	50	DNR-10
TOTAL	**Aquatic Lands Enhancement Account**	**808**	
Oil Spill Assistance Account			
UW Sea Grant	Oil Spill prevention and education	55	UW-02
	Small Spill Oil Study	150	UW-03
TOTAL	**Oil Spill Assistance Account**	**205**	
Local Toxics Control Account - Operating			
Ecology	Contaminated sediments, dredging and various Puget Sound cleanups	**9,675**	DOE-07
Derelict Vessel Removal Account			
Natural Resources	One-time derelict vessels removal increase	**450**	DNR-07
State Building Construction Account - Capital			
Ecology	Local Innovative Stormwater Projects	7,750	DOE_19
Natural	Deepwater geoduck and sea cucumber study	650	DNR-04

Agency	Title	Dollars in 1000s	Budget Code
Resources			
	Aquatic Marine Station	400	DNR-11
Fish and Wildlife	Estuary and salmon restoration projects	5,000	DFW-09
State Parks	Wastewater management and water conservation	10,183	PRC-03
	Stormwater runoff	1,845	PRC-04
	Habitat improvement	4,000	PRC-05
	Toxics and creosote removal and structure replacement	3,972	PRC-06
TOTAL	**State Building Construction Account - Capital**	**33,800**	
State Toxics Control Account - Capital			
Ecology	Puget Sound cleanup and restoration - upland	705	DOE-16
	Puget Sound cleanup and restoration - upland	905	DOE-18
TOTAL	**State Toxics Control Account - Capital**	**1,610**	
Water Quality Account - Capital			
Ecology	Helping Homeowners Save the Sound (onsite sewage systems)	**3,000**	DOE-20

Total Operating Funds Requested	$43,914,887
Total Capital Funds Requests	$38,410,220
2007-2009 Puget Sound Plan Enhancement Requests Total All Funds	**$82,325,107**